

THE ECONOMICS
of
NATIONAL SECURITY



NATIONAL
INTELLIGENCE

INDUSTRIAL COLLEGE OF THE ARMED FORCES
WASHINGTON, D.C.

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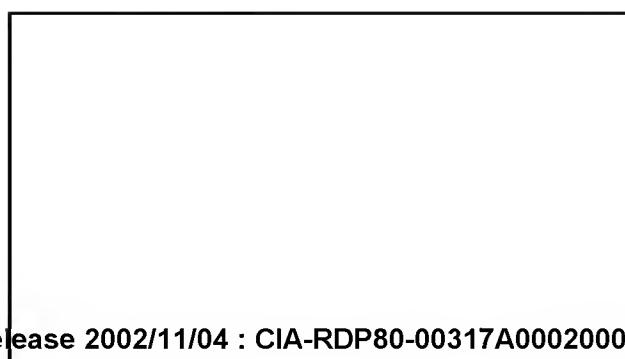
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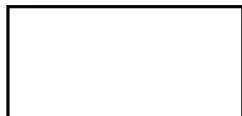
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INDUSTRIAL COLLEGE OF THE ARMED FORCES
WASHINGTON, D.C.

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FOREWORD

The expanding role of intelligence in support of those who formulate and execute national security policies of the United States is abundantly evident today. For an alert and effective defense, indeed, for its very survival, the Nation needs an adequate intelligence system. This system must be able to provide an accurate picture of the world as a whole, of the capabilities and intentions of potential enemies, and of the chances of imminent attack by an aggressor. It must furnish information on political, diplomatic, military, economic, and other matters. And it must remain the servant of national policy, subject to effective, continuing review and control by the government.

Many readers can still recall vividly the clandestine efforts of the Office of Strategic Services in World War II, with agents operating behind enemy lines and guerrilla leaders dropped into various countries. Yet even then much work of less dramatic nature was also done to assemble and evaluate the masses of information vital to the conduct of diplomacy or military operations. Intelligence today can draw on electronic sensing devices, powerful high-speed cameras, advanced computers, and other highly sophisticated types of equipment. Despite these technological advances, intelligence is still a difficult process of collection, analysis, evaluation, and synthesis of information. It remains a job for well-trained, competent, experienced, and dedicated professionals.

In an earlier era when the United States was more insulated from events abroad, national policy decisions could safely be formulated without the organization for intelligence developed since World War II. Today intelligence on foreign countries, although hardly the only consideration in policymaking, is one that in many instances overrides all others. The intentions, capabilities, and vulnerabilities of foreign countries are becoming more and more relevant to U.S. courses of action, and policy decisions affecting the Nation's security rest increasingly on information provided through the machinery and processes of national intelligence described in the following pages.

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I

THE INTELLIGENCE COMMUNITY

Intelligence is collected and analyzed on many command echelons. An infantry company in the field conducts scouting and other observational activities in its immediate area of operations. The commanding officers of battalions, regiments, divisions, and armies similarly rely on intelligence—either developed by their own G-2's or received from other echelons—to support them in the execution of their missions. There may at times be an unhappy duplication of activities by the intelligence units in the hierarchy, but the desirability of giving intelligence support to the operational commands at all levels is not seriously questioned.

Before World War II, the highest echelon of intelligence in the United States was the departmental level. Military analyses were produced by the War and Navy Departments and political analyses by the State Department to assist the respective Secretaries in the discharge of their responsibilities. Estimates produced by, say, the War Department did on occasion go beyond a mere review of military considerations to take in other elements of the situation as well. For the character of war in the 20th century and of the tensions between wars called increasingly for assessments of military capabilities, not in isolation but in conjunction with economic strengths, state of scientific achievements, political intentions, and psychological vulnerabilities. The War Department however, was then clearly giving its views on matters in which other agencies might claim a greater competence, and the presumptive departmental bias of its estimates tended to vitiate their acceptability. There was no mechanism to provide the President and those who assisted him in formulating national policy with coordinated intelligence analyses on matters which transcended the competence of a single department—in short, with national intelligence.

WORLD WAR II ARRANGEMENTS

World War II struck home the urgent requirement for improved intelligence support to those who formulated national strategy. Pearl Harbor was a clear failure of intelligence. Despite the victory over Japan, the stamp of the disaster remained indelible on the American

consciousness. The Hoover Commission in 1955 observed, "The CIA may well attribute its existence to the surprise attack on Pearl Harbor."

Even before Pearl Harbor, the President took the initiative to develop the machinery for producing national intelligence. In July 1941, the office of the Coordinator of Information was set up with a charter to collect and analyze strategic intelligence and furnish the results to the President and other agencies. The office was transformed after Pearl Harbor into the Office of Strategic Services (OSS). Strategic intelligence, pertaining as it does to the capabilities, vulnerabilities, and probable courses of action of foreign nations, covers much the same ground as national intelligence in that both types are commonly addressed to the top officials charged with formulating and executing national policy. In the strictest sense of the term, however, strategic intelligence can be conducted on the departmental or other level without being offered, like national intelligence, as the coordinated view of the intelligence community. Nevertheless OSS was a lineal ancestor of CIA and so a landmark in the development of the community for producing national intelligence. OSS made a lasting impact by the stimulus it gave to the use of scholarly techniques in intelligence analysis, although the popular literature has centered on the organization's more dramatic "special operations," such as the support of guerrilla activities behind enemy lines. OSS recruited academicians by the hundreds, many of whom served as officials in successor intelligence agencies and were among the first to articulate a doctrine of intelligence to encompass the organization and activities of the national-intelligence community.

OSS did not effect the interagency coordination required to dignify its analyses with the designation of national intelligence. The synthesis of intelligence during the war was rather centered in the Joint Intelligence Committee (JIC) of the Joint Chiefs of Staff. OSS was represented on the JIC along with the Department of State, the Foreign Economic Administration, and the military services. It is questionable whether even the centralized intelligence performed under the JIC could strictly be called national intelligence, since its purpose was to support the requirements of the Joint Chiefs. Joint collection groups, staffed by civilians and military officers, were set up in the various military theaters. The joint effort was also successful in bringing out a good compendium of data on terrain, targets, population, and other items of basic intelligence in the JANIS (Joint Army-Navy Intelligence Studies) compendiums. But no fully effective mechanism was evolved for the production of composite intelligence estimates on such issues as the enemy's staying powers or the need to bring the USSR into the war, and policymakers drew on

individual or departmental analyses for background on these vital issues of the day.

POSTWAR STRUCTURE

It was widely appreciated that the wartime intelligence structure was makeshift, but there was widespread disagreement at the end of the war on the best institutional arrangements for intelligence production. In some quarters, there was advocacy of a single centralized agency. Elsewhere, a centralized agency, which might increasingly arrogate to itself activities traditionally performed by the intelligence organizations within the military services, was viewed as endangering the fulfillment of military missions. The nature of the compromise finally evolved was foreshadowed in January 1946 when the President issued an Executive order setting up a National Intelligence Authority composed of the Secretaries of State, War, Navy, and the President's personal representative. The National Intelligence Authority served in the nature of a board of directors over a Central Intelligence Group, which operated under two basic principles. First, its mission was principally to coordinate the intelligence produced in the various departments of the Government. Second, it was to perform only those other functions which the National Intelligence Authority decided could best be performed centrally.

These two principles for the production of national intelligence were retained by Congress when it passed the National Security Act of 1947 creating the Central Intelligence Agency. Perhaps even more important for the evolving shape of national intelligence was the creation, under this act, of the National Security Council (NSC). In the business world, there can be no sustained production of goods for which there is no market demand. In the Government, similarly, efficient services are not likely to be offered where there is no articulated demand for those services. The NSC has played an historically noteworthy role in making insistent demands on national intelligence, and the intelligence community has steadily improved its skills in tailoring its product to serve the needs of policymaking at the highest echelons. This orientation of intelligence to the requirements of national policy has been further encouraged by the NSC's statutory authority over intelligence production.

THE NATIONAL SECURITY COUNCIL

The President presides over the meetings of the NSC. The National Security Act of 1947 (as later amended) prescribes four other statutory members: the Vice President, the Secretary of State, the Secretary of Defense, and the Director of Emergency Planning—the last concerned with the mobilization and management of the

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Nation's resources in emergency situations. The statute permits the attendance of such other officials as the President desires; the regular participation at Council meetings of the Secretary of the Treasury and the Director of the Bureau of the Budget insures that matters of national strategy are considered in the context of economic realities. In addition, the President on occasion invites other officials to sit in on meetings if the agenda includes items in which they have a special interest. Such ad hoc participants have included the Secretary of Commerce, the Secretary of the Interior, the Ambassador to the United Nations, and the Director of the U.S. Information Agency.

The Special Assistant to the President for National Security Affairs acts as executive officer for the NSC. A key figure in keeping the White House abreast of national security problems, he prepares the agenda of Council meetings and personally briefs the President on NSC matters.

Two other officials participate in Council sessions: the Chairman of the Joint Chiefs of Staff and the Director of Central Intelligence. By statute, these are advisers rather than members of the Council. They present their views in their areas of competence but do not join in the final articulation of national policy recommendations.

The statutory function of the National Security Council is to "advise the President with respect to the integration of domestic, foreign, and military policies." The working style of Presidents varies, and the role of the NSC has varied correspondingly from administration to administration. President Truman did not regularly attend meetings of the NSC until the outbreak of the Korean War. Under President Eisenhower, the NSC met almost weekly, and considerable reliance was placed on organs set up within the NSC to prepare formal papers defining national policy positions and to survey the implementation of policy by the executive agencies of the Government.

These organs of the NSC were abolished under President Kennedy, who called on the Council as a group less frequently than did his predecessors. In place of formal Council deliberations, task forces on specific problems are now often used to provide the White House with viewpoints that represent the consensus of the participating departments and agencies. The task force does not ordinarily come within the NSC structure: The Berlin Task Force and the Counter-insurgency Task Force are interagency groups that are chaired by State and report to the President through the Secretary of State. An example of an interagency task force within the Council structure is the Executive Committee of the NSC, organized in the fall of 1962 for the Cuban crisis.

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Insofar as the Council must obtain the information it needs to support its policy recommendations, the lawmakers considered it important to give the NSC considerable authority over the national intelligence process. The 1947 statute placed the Central Intelligence Agency under the Council. Many of the responsibilities of CIA and of other intelligence organizations are set forth in directives issued by the NSC. The Council has also established intelligence committees to coordinate certain activities within the intelligence community.

THE U.S. INTELLIGENCE BOARD

The highest ranking of these committees is the U.S. Intelligence Board (USIB). The USIB acts as a sort of board of review over the intelligence community, meeting normally once a week, oftener during crisis situations. The agendas of USIB meetings cover not merely matters of substantive intelligence but also the general problems of administrative relationships within the intelligence community. Since the heads of the various intelligence organizations are on the Board, the understandings reached at USIB sessions are generally effective in achieving smoother working relationships on the lower echelons.

There are six intelligence organizations represented on the USIB. *Central Intelligence Agency.* The head of CIA is the Director of Central Intelligence, but his responsibilities extend beyond the Agency itself. He is the senior intelligence adviser to the President, and he undertakes the coordination and guidance of "the total U.S. foreign intelligence effort," in the words of a letter from the President of January 1962. Reflecting this larger role, the Director of Central Intelligence, who formerly both presided as chairman of the USIB and acted as the CIA member, now serves on the Board only in the capacity of chairman. Since 1962, the practice has been for the Deputy Director of Central Intelligence to sit on the U.S. Intelligence Board as the representative of CIA.

While CIA's role in matters of intelligence interpretation is in large part one of melding the estimates of other USIB agencies, it also propounds its own viewpoints in the general effort to reach a consensus. On Sino-Soviet bloc economic developments, for example, CIA originates a large part of the contributions to strategic estimates, and CIA viewpoints in this area tend to carry the weight that the services carry in military intelligence and that other USIB agencies carry in their special fields of competence.

When the analyses of all these agencies are integrated in CIA or one of the interagency intelligence committees, the resultant product can be presented as national intelligence. This product may take

the form of strategic estimates (say on the probable course of Sino-Soviet relations), of basic encyclopedic descriptions (terrain, religion, labor force, harbors, air force, governmental organizations, transportation, etc.), or of current intelligence assessments (the meaning of Khrushchev's latest statement on Cuba). CIA must sometimes bypass the machinery for complete coordination in the case of current intelligence, where time pressures may call for quick preliminary assessments, but the rule is to incorporate the consensus where possible of the intelligence community at large.

In addition to its responsibilities for analysis and coordination, CIA is chartered by the National Security Act of 1947 to perform for the rest of the intelligence community such services as the NSC determines are best performed centrally, as well as other functions relating to national security that the NSC may direct. Under this authority, CIA engages in clandestine collection of information, which is disseminated to analysts throughout the Government, and, if the contents warrant, directly to policymaking officials. [redacted]

[redacted] In addition, the Agency provides the central repository for all intelligence documents, the archives so to speak, which the researcher can use for the expeditious recall on microfilm of thousands upon thousands of military attaché cables, foreign service dispatches, and other classified reports.

State Department. Political intelligence as analyzed in the Department of State constitutes a major ingredient of national intelligence production. Foreign Service officers abroad provide some of the most highly informative reporting on political and economic conditions available to the intelligence community. Their reports are not products of clandestine operations but rather of information legitimately available to diplomatic personnel.

At headquarters in Washington, the production of finished intelligence in the State Department is the responsibility of the Bureau of Intelligence and Research. The head of the Bureau, The Director of Intelligence and Research—with rank equivalent to that of Assistant Secretary—serves as State's representative on the USIB. The Bureau stresses research and analyses that are "policy oriented," that is, clearly serve the needs of officials at the level of foreign policy planning or major decisionmaking. A pending decision with respect to diplomatic recognition of a new Latin American military regime might, for example, occasion an assessment by State intelligence of political repercussions and economic implications.

Department of Defense. The Defense Intelligence Agency (DIA) is the newest of the USIB members. It was activated in 1961 to achieve unity of effort among the intelligence components of the De-

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partment of Defense and to improve the Department's capacity for the collection, production, and dissemination of defense intelligence.

DIA has replaced the J-2 of the Joint Staff, and it is now the adviser on intelligence matters to the Joint Chiefs of Staff and to the Secretary of Defense. The Joint Chiefs have designated the Director of DIA as their agent for developing recommendations to strengthen the intelligence capabilities of the unified and specified commands.

DIA is still in process of evolution, but it has already taken over most of the activities relating to national intelligence that were performed by the military services. It has, for example, assumed all the responsibility for current intelligence production in the Department of Defense, including the operation of a 24-hour center to receive, display, evaluate, and disseminate information necessary for quick warning alerts. DIA is also the focal point in the Department of Defense for the production of other intelligence studies and estimates, and for setting up collection guides and manuals used by intelligence components in the field. This guidance flows from the DIA through the unified and specified commands.

In March 1964, DIA became the sole representative on the USIB of all elements of the Department of Defense with the exception of the National Security Agency. DIA, however, will not entirely replace the Army, Navy, and Air Force intelligence organizations. These organizations continue to have responsibilities in such areas as counterintelligence, intelligence training, and technical intelligence under the coordination of DIA. They are no longer individually represented on the USIB, but they may attend in an observer capacity. Arrangements have been made, moreover, to assure that the intelligence chiefs of the services retain an important voice in the production of intelligence estimates approved by the USIB, especially in fields of particular interest like weapons development, air targets, and naval facilities.

National Security Agency. The interception and decrypting of foreign communications is carried on by NSA, an element of the Department of Defense. Communications intelligence has on many occasions provided the United States with information unavailable from other sources. The breaking of Japanese codes prior to Pearl Harbor revealed Tokyo's instructions to its diplomats in Washington.

Atomic Energy Commission. AEC plays an important role in covering foreign developments in the field of nuclear energy. Through interagency arrangements, AEC works closely with other intelligence organizations of the Government.

Federal Bureau of Investigation. The FBI is the chief internal security agency of the Government. Its participation in the produc-

tion of foreign intelligence is only occasional, but it frequently disseminates to other members of the intelligence community useful information which it has turned up in the course of its counterintelligence activities.

In addition to the agencies described above, a number of other Government departments collect and analyze information on foreign areas—Treasury on financial markets abroad, Commerce on economic conditions affecting U.S. export prospects, Agriculture on foreign crops, to name but a few examples. In its restricted sense, however, the term "intelligence community" is understood to include only the agencies represented on the USIB.

STANDING COMMITTEES OF THE USIB

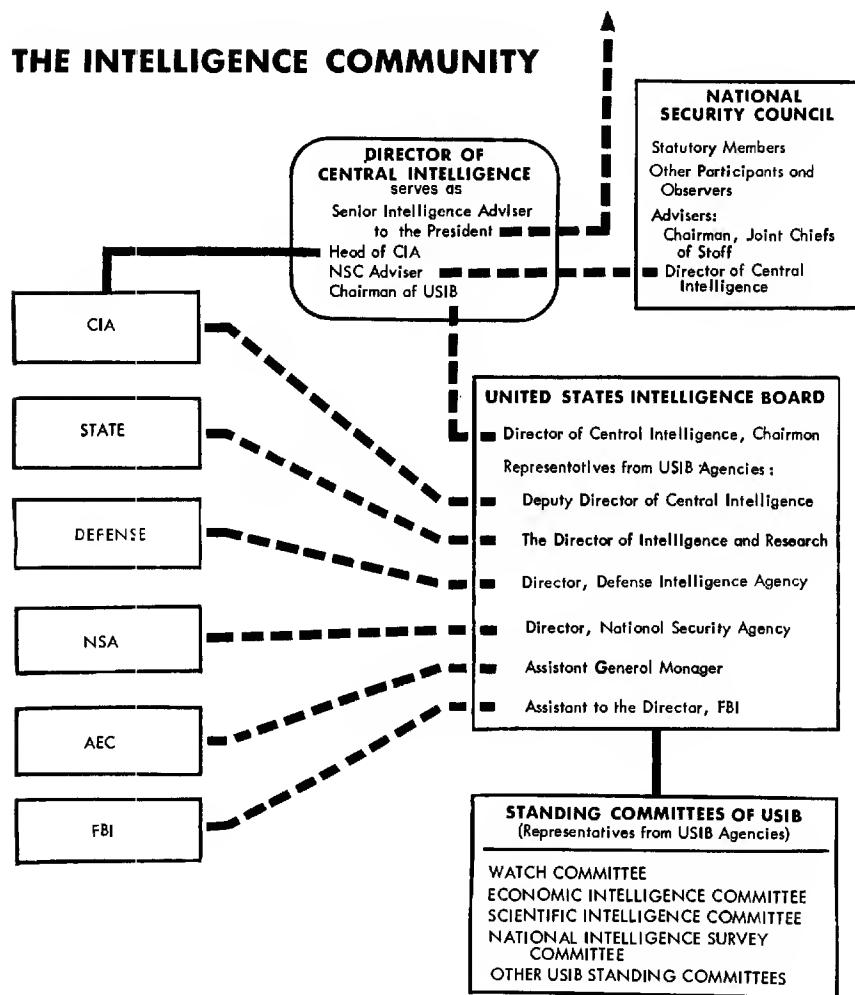
The representatives of the intelligence organizations on the USIB can oversee only the broadest phases of intelligence production, and standing committees of the USIB have therefore been set up in a comparable role on lower specialized echelons. The Watch Committee is an example. Watch Committee meetings, attended by representatives with their supporting staff of analysts from the USIB agencies, assess current developments with a special eye on possible implications for the early outbreak of hostilities. Watch Committee conclusions, after clearance and approval by the USIB, represent the consensus of the intelligence community with regard to the likelihood of imminent hostilities in any part of the world.

Other USIB standing committees of growing importance in recent years are three committees dealing with various aspects of scientific and technical intelligence, especially those relating to modern weapons and technology. Since the military services, AEC, and CIA are responsible for different aspects of scientific and technical intelligence, assessments of foreign scientific capabilities generally require considerable interdepartmental coordination and approval by one of these committees.

Similar coordination in the field of economic intelligence is performed through the Economic Intelligence Committee. CIA analysts produce most of the economic intelligence on the Communist bloc, but analysts in other departments also prepare frequent analyses on such economic areas as merchant marine transportation and optimum choice of industrial installations as military targets.

Another example of a USIB standing committee is the National Intelligence Survey Committee, which superintends the production within the intelligence community of "country encyclopedias"—studies of terrain, religion, economy, political structure, and other background features. CIA and other agencies contribute chapters of these studies,

and CIA incorporates the chapters into "National Intelligence Surveys." Surveys are prepared for each country and periodically revised.



THE ROLE OF INTELLIGENCE IN POLICYMAKING

In the National Security Council and in other forums dealing with national policy, the intelligence representatives avoid the impropriety of taking a position for or against specific policies. Their role is to provide the required intelligence, which will serve as an important but not the sole ingredient in decisionmaking; it is for the representatives of the operating departments to recommend policy.

The reason for this meticulous drawing of the line between national intelligence and national policy is the need to keep intelligence unbiased and free from the appearance of special pleading. It is considered best that intelligence organizations not become committed to particular policy interests. If naval intelligence stresses an enemy's vulnerability to sea blockade, or if air intelligence enlarges on foreign air force and missile strength, some observers see a discomfiting analogy to investment counseling by brokers who stand to gain large commissions by marketing certain stocks. The legislators who framed the National Security Act of 1947 had in mind the necessary line between policy formulation and intelligence support when they stipulated that the Director of Central Intelligence was to be an adviser rather than a member of the National Security Council.

Because of the secrecy that necessarily surrounds the making of national policy, there has been widespread public uncertainty that the line between policy and intelligence is invariably respected in practice. The question came up during the Senate hearings in 1962 on the confirmation of Mr. John A. McCone as Director of Central Intelligence. Mr. McCone detailed his concept of the position, affirming that his was not a policymaking role but rather one of getting the facts and evaluation to those responsible for making policy. The Senators present expressed agreement with this principle.

The principle must be applied to serve, not thwart, effective policymaking. It is proper for intelligence analyses to examine the probable effects in foreign countries of alternative U.S. policies. Assessments of the economic situation in Yugoslavia, for example, may be made under varying assumptions of the level of U.S. aid. Soviet intentions in Europe or Chinese Communist actions in the Far East may be similarly estimated under explicitly stated alternative assumptions of U.S. courses of action.

The "hands-off policy" injunction is again relaxed to permit intelligence to evaluate the results of policy decisions already taken. The effect of U.S. export controls on the Chinese Communist economy, for example, is accepted as a proper area for intelligence analysis. In such cases, the intelligence community may find itself with a heavy responsibility for decisions to revise or reinforce past policies, despite the theoretical apartheid between intelligence support and policymaking. A decision, Admiral Radford once pointed out, is an action that the executive must take when the answer does not suggest itself from the information at hand. When the information supplied seems so conclusive as virtually to suggest the proper answer, the philosophical distinction between intelligence support and policy decisions loses practical force.

A final word on the proper relationship between intelligence and policy must take note of the charge that policy has too often been determined without regard to intelligence assessments. This is a charge which had greater validity before the 1947 Act. In the first place, the prestige of the intelligence estimate was then not so high as now. In the second place, the intelligence community is far better apprised of the needs of policymakers today than formerly. As the senior intelligence adviser to the President, the Director of Central Intelligence is in frequent touch with the White House. Intelligence liaison with the Chairman of the Policy Planning Council in the State Department helps insure that intelligence studies are programmed and shaped to meet the needs of policymaking. The intelligence contribution to an interagency task force—say an analysis in depth of the social, political, economic, and military forces at work in a country—is likely to be of key importance for developing a “country strategy” that sets forth sound guidelines to U.S. diplomatic, military, economic aid, and other officials.

Formal arrangements for intelligence participation in policy forums are not guarantees of actual practice. The regular apparatus of government is sometimes modified and bypassed. This is truer under some administrations than others, but ad hoc devices and enhanced personal roles for key officials may be required under any administration, if the situation is urgent enough. Despite the deviations from established patterns, the intelligence community in recent years has been able to stay in the mainstream, so to speak. The intelligence analyst still shies from exerting undue influence on policy, but he works today with greater confidence than his counterpart of earlier years that his findings will get to the operating officials of the Government and receive their respectful consideration.

II

THE INTELLIGENCE PROCESS

The phases of national intelligence are analogous to the phases of intelligence on lower echelons, e.g., collection of information, analysis of data, and dissemination of conclusions. The national-intelligence process, however, is complicated by the very scale of its activities. The analysts are separated—at times by continents—from the collectors, so that national intelligence calls for essential liaison activities and machinery for reconciling the requirements of decisionmakers with the capabilities of collectors. By contrast, the intelligence process at the lowest combat level, where the collector may simply be a soldier detailed to man a forward observation post and report his findings to the battery commander, is an ideal of simplicity. The commander in this case understands the capabilities of the collector and can levy his requirements with no more than the usual difficulty that oral communication entails. The decisionmaker in this case is also the analyst; he both assesses the reports of the soldier and decides what to do about it.

On a somewhat higher level, an officer may be assigned to receive information from several forward observation posts. The analytical and decisionmaking process are now partly separated. The officer evaluates the reports received from the soldiers at their posts in terms of consistency with each other. The commander must still assess this information in terms of consistency with other data received and draw his conclusions on enemy dispositions and intentions.

On a still higher level, an intelligence component of a unit evaluates the information received and gives its view of the probable courses of action open to the enemy. On this level, the intelligence organization's sources of information are far more inclusive than those usually open to lower echelons. On this level, however, the specialization of labor among collectors, analysts, and decisionmakers becomes sharply defined, and troublesome problems of communication among the specialists arise.

REQUIREMENTS

As the organization becomes more complex, a machinery for requirements is found desirable to facilitate communication among personnel in the various stages of the intelligence process. The need for intelligence information may arise at any level; we may take as

illustrative a need arising at the decisionmaking level, say, of a Voice of America radiobroadcast programer who wants to know how well *Doctor Zhivago* is selling in South Asia and how closely government officials, military officers, and university students there are following the tribulations of Boris Pasternak. In the likely event that this information is not immediately available, the intelligence-producing organizations will be asked to provide it.

The information may be readily at hand in the files of the intelligence analyst. If so, the task is relatively simple; the analyst simply brings his talents to bear on the assembly, evaluation, and presentation of the data in a manner—say, a short memorandum—useful to the radio programer. The whole process from the initial levying of requirements by the programer to his receipt of the desired memorandum may be completed in a few hours.

When there are gaps in the analyst's files and the deadline for his memorandum permits, he will levy requirements on the collectors for the missing information. The analyst stands to be embarrassed, however, if he levies his requirements only to be told that the information has already been collected and disseminated. The essential preliminary to the formulation of spot requirements, therefore, is to ascertain that the answers are not already available. This means a check with other analysts in whose files the information desired could conceivably be found. It means in addition a check with the reference services in the Central Intelligence Agency, which by electronic data-processing methods can quickly retrieve from its microfilm files copies of intelligence documents received from all agencies of the intelligence community.

The analyst who decides to go ahead and levy requirements is under the strongest obligation to explain his needs clearly to the collectors. The "anything you have on Boris Pasternak" type of requirement is likely to elicit a flow of irrelevancies. A useful adjunct of a good requirement is some background to suggest what is already known in order to help the collector approach his task as a man who is at least well informed if not necessarily an expert on the subject. The questions that follow the background information will indicate specific lines of inquiry for the collector: For example, what statements about the affair can be reliably attributed to individual government officials? What was the nature of discussions on Pasternak following certain lectures at the military command and staff schools? What commentaries appeared in student newspapers? in book reviews?

The analyst will also suggest the field-collection agency he considers best equipped to gather the information. In this case, the services of more than one are clearly called for. South Asian government officials may have spoken about Pasternak in the course of conversa-

tions with Foreign Service personnel: The State Department is one obvious choice to receive the requirement. The military services, whose attachés have occasion to talk with South Asian officers, should also get the requirement. CIA's clandestine service may also be asked to help, but the rule is not to ask for covert collection if overt collection will do the job.

Normally, the analyst does not advise the field collectors on procedures for obtaining the needed information. On occasion, however, he is in a position to suggest a good lead. Knowing, for example, of several South Asian university professors who have just arrived as visiting lecturers in the United States, he may propose these as sources who could give informed responses to well-worded queries.

With a specific priority (urgent, routine, etc.), the requirement is off through channels to the appropriate collectors in the field, and the analyst may be relieved of further thought on the matter for the moment. When the responses come in, the analyst must take a little time away from his principal preoccupation with substantive analysis to help the field assess its collection effort. The clandestine services, in particular, are eager for the analyst's appraisal, since their sources include many of untested reliability. The retention or dismissal of these informants depends often on the consistency of their reports with other data available to the substantive experts at headquarters.

Servicing the responses may also entail supplemental requirements by the analyst. In our Pasternak illustration, the visiting lecturers many allude to a flood of letters to the editor which appeared in one of the South Asian literary reviews, and a request to the field for copies of the periodical may be in order.

An initial spurt of collection activity on behalf of the analyst will usually be followed by sporadic reports which become less and less frequent as the weeks go on. Eventually, Voice of America programmers must turn to more timely matters as world comment on Pasternak dies down, and the analyst decides to "close out" his requirement. The overcautious analyst who procrastinates in taking the final close-out step is a trial to field collectors, who usually have more requests for information than they can fulfill in detail.

This description of the analyst's role in levying requirements does not do justice to the offices that intelligence organizations have especially set up for "collection guidance," i.e., informing collectors of the priority needs of intelligence analysts. Collectors must have a broad picture of intelligence needs if they are to allocate their limited resources efficiently over an extended period of time. This picture is not acquired by conversation with individual analysts, who are likely to stress the overriding importance of their own special interests. To prevent duplication and assign relative priorities, the com-

ponent responsible for collection guidance will check and validate the requirements that individual analysts wish to levy.

One of the first tasks of collection guidance is to draw up broad intelligence objectives that identify the critical problems of substantive intelligence (e.g., the capability of the U.S.S.R. for nuclear attack or the Chinese Communist capabilities to support guerrilla war in Southeast Asia). These intelligence objectives are not directives to the collectors but, rather, guides to planning for analysts and collectors alike.

Analysts may be able to address themselves to some of the objectives with little or no demand for new intelligence collection. In general, however, it will be necessary to detail intelligence gaps in so-called collection guides. These guides in effect incorporate the standing requirements upon collectors for specific categories of information: accomplishments or failures in fulfilling national economic plans, morale in the armed forces, radar defenses, and signs of factionalism in the governing political party, for example.

The standing requirements may be supplemented at any time by spot requirements, like those described above relating to the Pasternak affair. The means are at hand, moreover, to levy requirements on an urgent basis. At any hour, it may be necessary to take immediate action to clarify information suggesting that a crisis situation is in the making. This is likely to entail some rather frantic telephoning to alert collectors and to stay abreast of U.S. operations and deployments. If a sudden coup abroad seems to be taking a nasty turn, the intelligence officer responsible for collection guidance will stay in close touch, for example, with the all-night center in State Department. In the course of the night, he will perhaps levy a requirement for an outgoing cable to learn the latest on efforts of deposed leaders to get U.S. asylum. Collection guidance is a round-the-clock activity, and the "action officer" of collection guidance components has to take his turn of night, weekend, and holiday duty.

COLLECTION

In modern intelligence organizations, the analyst's "in-box" is filled daily with the information that has been gathered for him by a far-flung network of collectors. The in-box is the analyst's mailbox, so to speak, to which is delivered the counterparts of the magazines, newspapers, and other information media that keep the well-educated American an informed citizen. The intelligence analyst is thus able to follow his academic bents as a sedentary, good life-insurance risk rather than the clock-and-dagger figure of television folklore.

The picture of the intelligence analyst in the academic research role is rendered still more fitting by the nature of data he usually prefers to work with—overt or semiovert. Not that he deigns to use the product of clandestine collection; in some cases, he prizes it as the only intelligence available. But usually he finds that overt sources provide the greater part of the reliable information open to him. In many cases, the conclusions reached by the intelligence analyst are not appreciably different from those that would be reached by scholars drawing on the information available in their university libraries.

1. *News services.* Intelligence organizations in the Free and Communist Worlds subscribe to or monitor the press services. Reuters, AP, or UPI tickers often print the first news of a Latin American revolt, the resignation of important officials, the text of a communiqué released at the end of a state visit. Many an analyst has to leave his warm bed in the early morning hours to prepare his quick assessment of a news scoop ticking over the press wires.

During more relaxed working hours, the analyst can take advantage of the wealth of data offered daily in the newspapers, both foreign and domestic. The dispatches from news correspondents in London, Berlin, Hong Kong, Djakarta, Moscow, and other cities are not always in accord with information in intelligence files, but the quality of reporting compares favorably with the average of intelligence information that comes through the in-box. Insofar as information from news sources is concerned, the intelligence organizations in the Communist world have, of course, all the advantage. "I would give a great deal," former Director of Central Intelligence Allen Dulles has said, "if I could know as much about the Soviet Union as the Soviet Union can learn about us by merely reading the press."

2. *Foreign publications.* Collected either by subscription or by purchase in foreign countries, these publications make up a valued component of the intelligence take. The Communists since the death of Stalin are publishing considerably more detail in their economic and technical journals. At the 20th Party Congress in February 1956, Premier Bulganin urged the Soviets to "reduce secrecy measures to allow a freer exchange of information and opinion."

Despite the relaxation of Soviet security, promoted in large part by the propagandistic advantages of publicizing technical achievements, many Soviet journals are still chary about releasing types of data freely published in the West. By contrast, with virtually unlimited access to American open-source trade publications and scientific journals, the U.S.S.R. can keep relatively well informed on the status of the U.S. guided-missile program, on atomic-reactor and electric-power installations, and on rail and highway tunnels. For a small

fee, the Russians can obtain technical descriptions of inventions from the U.S. Patent Office.

The timelag between publication and arrival at the in-box limits the usefulness of foreign publications as current intelligence. Their principal serviceability is to provide details which can be assembled and incorporated in research studies. In the absence of many foreign publications, the intelligence services often found their research tasks exasperatingly difficult in World War II. A Japanese-language who's who of Japan published in 1940, for example, contained 150,000 short biographies. Apparently no one in the United States requested a copy before Pearl Harbor, and resort was necessary during the war to another edition in the English language, which contained only 3,000 biographies.

3. *Radio Monitoring.* Foreign radio broadcasts provide a large and valued part of the material that goes into current-intelligence production. While some of the information in the broadcasts finds its way into the columns of the daily press, much of it never does. In any case news accounts are sometimes distorted, and they must be checked against original texts.

There is, of course, an overlay of propaganda in some broadcasts, which handicaps the discrimination between facts and claims. Nevertheless, study of enemy broadcasts during World War II showed that sophisticated propaganda analysis could yield revealing insights to supplement other information available to intelligence officers. After the war, perceptive scrutiny of veiled phrases in broadcasts from Moscow and Peiping suggested sharpening differences between the two Communist allies during the 1950's, when most other indications pointed to continuing Sino-Soviet solidarity.

4. *Domestic collection.* It is not always necessary to go abroad to collect intelligence on foreign countries. Interviews with informed persons in this country have often yielded information of value. The Hungarian revolt enlarged the number of intelligence sources in the United States by the influx of refugees. Letters from families made available by immigrants to this country have provided useful details on conditions abroad. Only a small percentage of businessmen, Government officials, and others who visit foreign countries sell their stories for publication. The others are generally willing to recount their experiences to interested listeners. Sometimes travelers report conversations with foreign officials who apparently intended that their remarks would be passed to others in the United States. The information is nonetheless of interest to the intelligence analyst on that account.

5. *Diplomatic collection.* Foreign Service officers cannot engage in any activity that savors of espionage, but in the discharge of their

official duties, they are able to offer authoritative opinions on political, economic, and cultural developments in a country. On many occasions they have forwarded information that was of highest importance for national security. In 1935 the Baldwin cabinet in London was jolted into expanding the British air force by Foreign Secretary Sir John Simon's account of his conversation with Hitler. The Fuehrer told Sir John that Germany had already achieved air parity with Britain and that Germany would go on building until its air force was as large as those of Britain and France combined.

The diplomatic reports from the U.S. Embassy in Tokyo provided vital information on the developing tensions in the Pacific. In January 1941 Ambassador Grew wrote:

A member of the Embassy was told by my . . . colleague that from many quarters, including a Japanese one, he had heard that a surprise mass attack on Pearl Harbor was planned by the Japanese military forces, in case of "trouble" between Japan and the United States; that the attack would involve the use of all the Japanese military facilities. My colleague said that he was prompted to pass this on because it had come to him from many sources, although the plan seemed fantastic.

6. *Attachés.* Like Foreign Service officers, military attachés are able in pursuit of their legitimate functions to collect intelligence information without recourse to clandestine methods. Invited to observe maneuvers, to visit installations, to exchange such data as training manuals, they are able to gather and forward military information of a wide variety.

The military attaché can be a particularly useful collector in a country where the army is or threatens to become a force in politics. In the course of his official associations, he may then become the recipient of information of high political significance.

Civilians also serve as attachés in U.S. embassies abroad—agricultural attachés, for example. The impact on the American consciousness of recent scientific progress has resulted in an increase in the number of scientific attachés serving abroad. The information collected by the civilian attachés is overt but nonetheless valuable in economic- and scientific-intelligence production.

7. *Photography.* Motion and still pictures are highly regarded in such applications as target analysis or the computation of plant capacities. While some of the pictures must be taken covertly, others are free for the clipping from such propaganda periodicals as *China Pictorial*. Many are drawn from the travel mementos of private citizens. Pictures taken by a traveler to the Solomons before World War

II formed a useful portion of the intelligence available to the First Marine Division when it went into Guadalcanal in August 1942.

Aerial photography in wartime has often paid its cost many times over. Aerial photography, for example, revealed the location of German rocket-launching ramps at Peenemunde. Subsequent RAF bombing delayed production of the German missiles for months. More recently, aerial photography provided the confirming intelligence of Soviet missiles in Cuba.

8. *Clandestine collection.* On numerous occasions, clandestine collection has yielded outstanding results. The U.S.S.R. was notably successful after World War II in stealing atom bomb secrets through the services of such skilled agents as Bruno Pontecorvo and Allen Nunn May. In World War II, the butler of the British Ambassador in Turkey transmitted to the Germans photographs of documents which gave details of Allied strategy. Fortunately for the Allied cause, the Nazis failed to act on the intelligence in the belief that it had been planted by the British.

As a security measure to protect sources of information, reports from clandestine services describe the agent only in very general terms, e.g., "a university student who is a member of the Young Communist League and might have access to the incident he recounts." To aid the analyst, such reports usually contain the field's evaluation of the source's reliability and its own appraisal of the accuracy of the information supplied. The field evaluation is expressed by a letter-number rating in accordance with the following key:

<i>Appraisal of Source</i>	<i>Appraisal of Content</i>
A Completely reliable.	1 Confirmed by other sources.
B Usually reliable.	2 Probably true.
C Fairly reliable.	3 Possibly true.
D Not usually reliable.	4 Doubtful.
E Unreliable.	5 Improbable.
F Reliability cannot be judged.	6 Truth cannot be judged.

This rating is sometimes the only guide the analyst has to the credibility he should attach to the report. At other times, he can assess it against other confirming or contradictory information in his files.

9. *Communications intercepts.* British interception of the famous Zimmerman message in 1917 was one of the important events of that year leading up to U.S. entry in World War I. The message from Berlin's foreign minister contained instructions to the German Ambassador in Mexico for opening negotiations with that country and offering it the opportunity to recover its "lost territory in Texas, New Mexico, and Arizona."

INFORMATION PROCESSING

The scale of collection is now so large that the efficiency of the intelligence process rests to an increasing extent on the skills of the reference services. The intelligence analyst can store in his own individual files only a small part of the documents that flow daily through his in-box. For the remainder, and for the still larger part that bypasses his in-box, he rests his trust in the reference services which operate the central repositories where all incoming information is classified and filed. The flow of intelligence information from the collectors to the analysts is usually simultaneous with the flow of copies to the reference services.

The initial task of the reference service is to index incoming documents by a numerical code according to subject (commercial airfields, railroad transportation, treaties, etc.), area (Lebanon, North Vietnam, Ecuador), source (air force, foreign publication, clandestine service), security classification (secret, confidential, unclassified), and date of information. A document which treats more than one subject or area must, accordingly, be recorded under several number codes.

The documents themselves are usually microfilmed. Punched cards and electronic data processing permit rapid retrieval of the microfilm copies upon the analyst's request.

Useful as is the reference service in the recording, storing, and recalling of information, its machine assets also enable it to go a step further by synthesizing data in response to specific requests. Thus, for target analysis, data-processing techniques can quickly produce a listing of large industrial installations in a specified city. Or they can come up with a listing of Soviet scientists who have been reportedly engaged in nuclear-energy research. While these applications of automation are hardly likely to displace the analyst, they stand to relieve him of some of his onerous data-assembly duties and leave him freer for interpretative analyses. Increasingly it is the reference service rather than the analyst that comes up with the information-sans-analysis answers which are often called for (percentage of Chinese cotton production that goes into padding for clothing and bedding, for instance).

Utilizing these obvious advantages of automation, the reference services can also publish general listings designed to economize the number of special requests. One such aid may be a who's who of scientific personnel; another, a virtual Dun & Bradstreet record of foreign industrial firms.

ANALYSIS

The conventional description of intelligence as it comes from the collectors is "raw intelligence" or "intelligence information." It is

not "finished intelligence" until it has gone through the stages of evaluation and interpretation by substantive experts. In cases of urgency, raw intelligence may be passed directly to decisionmakers. The failure to report to the Army commander in Hawaii the sighting of a two-man Japanese submarine in Pearl Harbor about an hour and a half before the Japanese attack was one of several lapses preceding the disaster. When time permits, however—and this means in the great majority of instances—it is finished intelligence rather than intelligence information that goes to the decisionmakers.

Analysis in intelligence has broad similarity to the process in academic research. One of the distinctions is that the academician is freer to examine theory and principles. While a grounding in, say, economic theory is of considerable advantage to the economic-intelligence analyst, he must be responsive to needs of the "consumer," and his research is necessarily oriented toward terms of hardware and other assets and liabilities, not to ivory-tower studies of theoretical equilibria.

The academician can direct his research toward subjects on which he has reason to believe information is available for the seeking. The intelligence analyst is compelled by consumer demand to analyze a situation where the gaps of knowledge are uncomfortably wide. This means that the intelligence analyst is called on to offer tentative conclusions that the academician would withhold pending additional data. For policy decisions cannot await complete information; complete information is rarely to be had.

Another distinction is the usefulness over time of academic and intelligence studies. Few intelligence studies have longtime usefulness. Constantly in order are reappraisals and revisions to keep the studies current.

A final distinction is one which occasions some psychological distress to many intelligence analysts. The academician can publish and make a name for himself. The intelligence analyst is by comparison nameless. Most of his studies are unsigned and their circulation restricted. He is unable to make his mark in the circle of subject or area specialists he wants eagerly to impress.

Reconciled to anonymity, with restricted opportunity to enjoy the pride of authorship, the intelligence analyst should in addition display other qualities prized by the recruiting office:

1. *Expert knowledge.* In the junior analyst, this can be developed through experience on the job; it is the essential attribute of the senior analyst. The senior analyst on Latin America understands Spanish or Portuguese, has worked or traveled in the area, and is as well grounded in its affairs as any member of a university faculty. Expert knowledge is not altogether a function of age. Some lines of

special knowledge are more likely to be found in young men and women. The relatively recent graduate is more apt to understand the techniques of interindustry statistical analysis than economists of an older generation. Students of Chinese Communist theory are more readily found in the postwar generation of Sinologues than among the "old China hands." The younger rather than older physicists have kept up with recent advances in electronics. Seniority, on the other hand, has its advantages for the supervisor, who must understand the general structure of a problem which cuts across several fields.

2. *Honesty.* The analyst may be under strong pressure to support conventional prejudices. The intelligence organization of a government-in-exile is under constant drive to overanalyze signs of popular discontent at home. In the United States, variances among estimates prepared by different departments of the Government have frequently reflected pressures on analysts to backstop their departments' special interests.

3. *Imagination.* "Genius," observed William James, "in truth means little more than the faculty of perceiving in an unhabitual way." A characteristic failing of many experts whose talents fall short of genius is their disdain of imaginative hypotheses. Conclusions must be grounded in evidence, but hypotheses must first be entertained and tested by the evidence. The cavalier rejection of hypotheses by experts has been responsible for the persistence of error in a multitude of cases. The French Academy of Sciences took years to concede the impropriety of its arrogance in rejecting the thesis that meteorites originated in outer space.

4. *Articulateness.* The intelligence analyst must communicate his findings to the decisionmaker. Some decisionmakers prefer to be briefed orally; some insist on abstracts which do not exceed a page in length. The analyst must be able to tailor his presentation to his medium. He will usually have the assistance of an editor to clarify his prose, but under "flap" circumstances, he will have to articulate his thoughts quickly and clearly without editorial polish.

5. *Alertness to detail.* The volume of data moving across the analyst's desk is normally so large that he is in danger of missing important details. The ideal analyst is the Sherlock Holmes genius who can perceive the significant in the mass. Is it a reflection of a man's standing in the party if he is referred to as "first secretary" one month and "First secretary" later? Is a wan, tired reticence indicative of loss of power? There is a real danger of overanalysis and drawing of unwarranted conclusions from such fragments of indications, but the keen intelligence officer is alerted to further lines of investigation and perhaps to the desirability of new requirements on field collectors.

The analytical process in intelligence varies with the office. The functional intelligence analyst (economic, scientific, or military) is often engaged in research studies akin to doctoral dissertations. The current-intelligence officer, with his quick assessments of daily developments, bears a likeness to the newspaper columnist. The estimates officer has to integrate the contributions of several departments so that a general consensus rather than his own personal view emerges. These distinctions notwithstanding, certain phases appear common to the analysis process in all intelligence offices.

1. *Defining the problem.* The analyst must have terms of reference. These may be specified for the estimator in guidance from policymakers ("We need an estimate on Chinese Communist intentions toward Southeast Asia"). Or they may be redefined for the functional analyst who is to contribute to the estimate ("We'll need backup on Communist China's prospective food harvests and population growth"). Or it may be clearly indicated to the current-intelligence analyst by the same sense that guides the journalist in deciding what is newsworthy ("I'd better hurry down to the office and get off some quick paragraphs on the meaning behind the Kremlin's new blast at Tito").

2. *Assembly of data.* The analyst's own files are usually the first place he goes to for the background he needs. Our current-intelligence analyst, for example, will look to his files for copies of earlier Soviet blasts at Belgrade and compare their tone with the latest attack. Because of the pressure of time, his own files may in fact be the only recourse open to him for the moment. The analyst researching China's food production, on the other hand, can look also to the files of other analysts, to the resources of libraries, and to the automatic data-processing machines, which can recover documents stored in the intelligence repositories.

3. *Evaluation.* The analyst must judge his data in terms of internal consistency and in terms of consistency with other known data. Are Communist China's harvest claims consistent with its statistics of acreage? with weather reports? and with estimates of reasonable crop yields? How does a report of troop movements square with the field evaluation of the source's reliability?

One of the analyst's most dangerous pitfalls in the evaluation phase stems from his own conservatism—his reluctance to accept information which does not square with his own stock conceptions. One of the intelligence community's preconceived concepts during World War II was that the prewar mobilization of the German economy left little slack for further expansion over the short run. Actually, German war production increased steadily until mid-1944. The estimate of

one U.S. agency that German war output went up rather than down in 1943 was rejected by many informed analysts at the time.

"False confirmation" of data is another hazard to the analyst in the evaluation phase. Reports received from several collectors are often traceable to one ultimate source. The various reports should be regarded as one. The danger of false confirmation becomes especially high when a foreign government deliberately fabricates reports to throw off enemy intelligence. A classic example of such deception was the British "Operation Mincemeat," which involved spurious messages recovered from the body of an Englishman off the coast of Spain during World War II. The messages fooled Nazi intelligence and resulted in the change of Germany's Mediterranean defense plans in the expectation of an Allied assault against Sardinia and Greece. The deception saved thousands of Allied lives when the landings came in Sicily.

4. *Study and interpretation.* Having assembled the data and decided which are valid and acceptable, the analyst must construct the mosaic which will answer the terms of reference given at the outset of the analytic process. Our researcher into Chinese Communist harvests has assembled data on past agricultural production of specific crops. He has also assembled whatever information is available on the regime's economic objectives as declared in annual and 5-year plans. He has assembled data on the success or failure in meeting previous agricultural targets. From his study and best interpretation of the data, he makes his own projection of Chinese Communist harvests. He balances this against food requirements as calculated from a projection of population growth.

5. *Presentation.* Intelligence information is not "finished intelligence" until it is rendered, with interpretative commentary, in a form that can be communicated to other persons. Sometimes this communication is effected through oral briefings. The Director of Central Intelligence, for example, briefs the National Security Council regularly on current-intelligence developments. More often, finished intelligence is presented in writing, which can take forms ranging from single-page memoranda to detailed studies accompanied by maps and other graphic aids.

DISSEMINATION

The term "dissemination of intelligence" is intended to mean its distribution to persons entitled to receive it. It is a term used by collectors to refer to the distribution of raw intelligence and by analysts speaking of the distribution of finished intelligence. The mechanical process is similar in both cases. The duties of dissemina-

tion are entrusted to a service component, which uses routine couriers, or, if circumstances dictate, special couriers, teletype, and other electric means of transmisssions.

The collection office in particular is constantly confronted with the decision to "dissem" or "no dissem," since a large part of its take is obviously of marginal value to analysts and may be useful only to develop a file which will ultimately permit an assessment of the source's reliability or efficiency. While analysis offices sometimes decide to make "no dissems" out of finished-intelligence studies, such studies are generally undertaken in the expectation that they will yield conclusions worthy of publication and circulation.

In the dissemination phase, both collection and analysis offices must decide how wide a circle of readers will receive the intelligence. In part, this decision can be based on the security classification placed on the report; if it is top secret, it will obviously not be circulated among those who have only a secret clearance. In addition, the dissemination decision is governed by the "need-to-know" rule; that is, regardless of his security clearance, a person should receive only the information he needs for the efficient discharge of his official responsibilities.

Both these rules serve as necessary security safeguards, but they can be prejudicial to national-security interests if applied overrigorously. The Joint Congressional Committee on the Pearl Harbor investigation condemned the overrestrictive circulation of intelligence derived from the decrypting of Japanese codes. The committee observed that "the fact the Japanese codes had been broken was regarded as of more importance than the information obtained from decoded traffic. The result of this rather specious premise was to leave large numbers of policymaking and enforcement officials in Washington completely oblivious of the most pertinent information concerning Japan."

III

CATEGORIES OF NATIONAL INTELLIGENCE

National intelligence in the United States may be distinguished by two features:

1. It is intended to serve the formulators of national-security policy.
2. Its content, transcending the exclusive competence of a single department or agency, is presented as the consensus of the intelligence community.

Since national policy is not designed to be a shifting guide to action but rather to serve as a standing precept over a considerable span of time, intelligence is needed that will afford rather long-range foreknowledge of the capabilities, vulnerabilities, and probable courses of action of foreign nations. Such intelligence is usually presented in the form of a "strategic estimate." When prepared at the national level as a composite of the views of the intelligence community, it is produced as a National Intelligence Estimate (NIE).

Strategic estimates may take weeks or months to prepare, although a "crash" NIE can also be produced on a current crisis. In the interim between the appearance of the estimates, the National Security Council customarily looks to reports of current-intelligence developments. It is on these reports rather than the longer-range strategic estimates that the NSC would have to rely to provide the sort of advance warning that was so notably missing before Pearl Harbor.

The factual information resulting from the collation of encyclopedic data—basic intelligence—is customarily produced for the use of other analysts but may also provide needed background information to high-level officials. When prepared as the integrated product of the intelligence community, it appears in a publication which has been officially designated as national intelligence (National Intelligence Survey).

All three categories of national intelligence—strategic estimates, current reports, and basic studies—are based on analyses prepared in the various departments and agencies by military-intelligence officers, economists, foreign-affairs analysts, and other functional specialists. These functional studies are designated in conventional usage as military intelligence, economic intelligence, political intelligence, biographic intelligence, etc. The responsibilities for their production are assigned by the NSC to the various departments and agen-

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cies: ground-forces intelligence to the Army, political intelligence to the State Department, biographic intelligence on naval personnel to the Navy, for example. A review of such functional-intelligence production requires the consideration of activities below the national-intelligence level and is reserved for the following chapter. Functional specializations are many and are not reviewed in depth. Economic intelligence is examined in most detail because of its special interest to the faculty and students of the Industrial College of the Armed Forces.

THE STRATEGIC ESTIMATE

The National Intelligence Estimate is the most authoritative expression of national intelligence today. Preliminary expressions of view by the intelligence community may go to the National Security Council in other analyses. The considered view of the community—reached in most cases only after protracted deliberation—is to be found in the formal estimate.

The function of National Intelligence Estimates is to suggest where the world is heading. This requires an examination of the present situation and a projection of expected trends over the period of the estimate. The length of the estimative period varies. A general estimate of the Soviet Union over the next five years might be regarded as appropriate to support policy decisions relating to the national posture toward international communism. A special estimate brought on by another crisis over the status of Berlin or the Chinese offshore islands might be expected to project Communist courses of action over the next six months.

When the estimative period is short, particularly in crisis situations where quick policy decisions are in the making, the task of the estimator may become especially trying. A 5-year projection permits successive corrections of intelligence and modification of policy as the estimates are periodically brought up to date. The shorter range estimates, on the other hand, may be all too quickly tested by events; the margin for error is narrower. Strategy in games can be modified if the play seems to be going against the individual. But if the game permits only one or two rounds of play, the initial strategy is an all-important determinant of the outcome.

DEFINING THE PROBLEM

The initial task of the estimator is that described in the previous chapter as the first step in analysis, namely, defining the problem or setting forth the terms of reference. If the estimate is to project the main trends in a foreign country over the next five years, the terms

of reference will cover the specific political, economic, and military issues that bear on decisions of long-range policy. With respect to the internal political situation, for example, is the present leadership stable? If the government is authoritarian, is its chief advanced in years and is his death likely to result in a struggle for the succession? What will be the role of the military in such a struggle? of the political party or parties? of other loci of power?

What can be said about popular attitudes? The estimate here, in addition to some necessary generalities, will outline the sentiments of specific groups in the population—intelligentsia, workers, peasants, national minorities. If there is widespread hostility to the government, will this manifest itself in passive discontent? in sporadic riots? in sustained armed resistance?

Particular attention attaches to the section of the terms of reference dealing with the foreign country's external relations, since developments in this field may impinge most directly on United States security interests. The estimate will be expected to assess present and prospective relations with allies, popular and official attitudes regarding the balance of forces in the world, and the nature and force of convictions relating to suitable principles for dealing with East-West tensions. Here again generalities will be supplemented by discussions of attitudes on specific issues, for example, United States military bases abroad, German unification, UN membership for Peiping. For, while generalities are useful, they must not conceal the prospect that the degree of support for or opposition to the United States will vary with the issue involved.

The terms of reference on economic issues will probably indicate an interest in policies relating to the allocation of resources. Is investment to be proportionately greater or less in the military-support industries? in consumer-goods industries? in agriculture? What projections can be made regarding the absolute level of defense expenditures? of total and per capita private consumption? How will changes in yields and exploitation of new lands affect crop harvests? What geographic shifts are foreseen in the location of industries?

The rate of economic growth, as calculated from estimates of gross national product, may be singled out as a good indicator of economic viability. In the dynamic economy, this rate of growth is expected to exceed the rate of population increase by a significant margin.

Economic relations with other countries will be examined for their possible bearing on the country's political orientation in foreign affairs. Is trade increasing with other members of the Communist bloc or Free World? What commitments have been made for receiving or extending foreign economic aid? Relative rather than absolute figures usually provide the better criteria for appraising the leverage which

economic relations may exercise on political orientation. The proportion of total foreign trade consisting of commerce with a particular country is more meaningful than the absolute level of trade.

If the country is a potential antagonist of the United States in armed conflict, especial care will be taken in setting forth the military terms of reference. The conventional questions will be asked about the size, equipment, and proficiency of the land, air, and naval forces. These overall aggregates will be supplemented by an examination of capabilities in different geographic areas. In addition to review of men and hardware, there may be a summary of current military doctrine in the country. What seems to be its thinking on such issues as surprise attack? on limited versus total war? on the military organization and weapons mix best suited for the needs of the day?

In today's world, the military strength of the country is a function in growing measure of scientific and technical capabilities. If the country surveyed is one of the more developed in the world, there will be a detailed appraisal of the state of research and technology in missiles, atomic-energy applications, electronics, and long-range aviation.

STRATEGIC STATURE

If the terms of reference are suitably defined, the estimate is in a fair way of being able to portray what Sherman Kent has called the "strategic stature" of the country, that is, the amount of influence it can exert in international affairs. This influence may be exerted by employing or threatening to employ military force, by economic reprisals or blandishments, by moral suasion, or by propaganda. It varies in accordance with the country's identifiable assets (as sought out by the terms of reference): friendships in the international community, military and nonmilitary strength in being, ability to mobilize forces and resources in emergencies, and resiliency in catastrophes. It further is limited by the country's liabilities: exposed geographical position, popular dissatisfaction, unstable leadership, economic backwardness. Its common border with the USSR is a noteworthy liability of Finland. The sympathy of neutralist nations for Yugoslavia is one of its assets.

INTENTIONS AND CAPABILITIES

If the National Intelligence Estimate went no further than to outline the country's strategic stature, it would still constitute a valued intelligence study. It must, however, come to grips with the "64-dollar" question, the probable courses of action. While intelligence has proved far from infallible here, the estimator can make a claim to something better than mere soothsaying. For one thing, he knows

what the country's leaders have declared their intentions to be. If they say they are going to modernize the military establishment, he may choose to accept the statement as an indication of their true intentions.

Second, the estimator knows that intentions in reasoning men are limited by capabilities. Estimates of Chinese Communist intentions to take Taiwan by military force will be governed by prior estimates of Communist capabilities to provide the amphibious lift needed for an attack.

Sometimes, the prognostication of a probable course of action is so difficult that the estimator has no recourse but to limit himself to an analysis of capabilities, noting that the exercise of the capabilities cannot be excluded as a reasonable possibility. To some extent, this statement of capabilities is an implied estimate of intentions, since estimators reject the consideration of capabilities whose exercise appears outlandish or clearly counter to national objectives, e.g., the British capability to assault Peru. The statement of capabilities comes closest to the assessment of intentions when "net" rather than "gross" or "raw" capabilities are considered. Gross capabilities are estimated without reference to possible counteraction, e.g., country A has the capability to commit 150,000 troops in an attack on country B. Net capabilities are related to opposing forces, e.g., Communist China can take over Outer Mongolia if the USSR does not intervene. Given Peiping's estimate of Soviet commitments to Ulan Bator, such a statement of net capability is almost equivalent to an estimate of Communist China's probable course of action towards Outer Mongolia.

Another recourse of the estimator, when the evidence is insufficient to support a flat prediction, is to identify the alternative courses of action that are consistent with a country's capabilities and policies. Country A, for example, can commit its armed forces to a full-scale military assault on country B during the period of the estimate, or it can limit its military actions to border incidents and threatening troop movements, or it can step up its harassments by a combination of propaganda and economic and diplomatic pressures. If, on balance, the weight of the evidence suggests that one course of action is more probable than another, the orders of probability will be given.

An intelligence estimate which allows for more than one possibility leaves the estimators open to the charge of acting the oracle whose prophecies seek to cover all contingencies. Their best defense may be to point to the statements of order of probability. Their only other defense is that a flat prediction in the absence of supporting intelligence is even more the mark of the humbug. Intelligence does no service for policymakers by overstating its knowledge. It is as important to

identify what is not known as what is known. History is replete with instances of inaccurate estimates based on insufficient information. Many analysts near the close of World War II understood that too little recent information was at hand to appraise the qualities of Japan's Kwantung Army in Manchuria. Informed opinion in the Government, however, was betrayed by the reputation for fighting strength which the army carried with it from its prewar days, and the entry of Soviet forces into Manchuria was urged. Actually, the best units of the Kwantung Army had long been transferred out to more urgent theaters of the Pacific.

The overcautious estimators are in fact not those who are chary of flat predictions but those who seek a "margin of safety" in forecasting the worst. If the worst does not eventuate, all heads will remain on their shoulders. If the worst happens without forewarning, on the other hand, the inevitable postmortems will find their scalps in the intelligence community. The mettle of the estimators is most severely tested when, despite a foreign country's military threats and militant displays, the background evidence suggests that the country will probably stop short of full-scale hostilities. Even with the proviso that hostilities are possible, it takes qualities beyond those found in the charlatan to affirm that, on balance, war appears improbable.

PRODUCTION PROCEDURES

The mechanics of producing a National Intelligence Estimate insure high responsiveness to the needs of the policymakers and the consideration of as much information as can possibly be brought to bear on the problem. While a schedule of production and revision insures that estimates on the most important countries are kept reasonably current, a good many estimates are prepared out of schedule on the suggestion of important policy officials.

The estimate initiated, all the agencies that will contribute (CIA, DIA, State, etc.) agree on the scope of the problem and the areas of study to be allocated to each agency. In the next several weeks (less if the situation necessitates), the basic research and initial analyses are completed by the contributing agencies. The Central Intelligence Agency fuses the contributions, and a first draft emerges which necessarily distorts points made by some of the contributors if unanimity of view on all points was lacking to start with. Redrafts and interagency meetings and perhaps more redrafts may be called for before a final paper is worked out. Approval by the

United States Intelligence Board is the final preliminary to publication as a new National Intelligence Estimate.

While this procedure may seem cumbersome, it does have the virtue of assuring that the best information and the best talents in the Government are brought to bear in the drafting of a very important intelligence document. The time involved in the procedure is not overlong when one considers that the analysis will provide part of the rationale underlying the Nation's policies for years. The time involved, moreover, can be telescoped on occasions of especial urgency. National Intelligence Estimates have been prepared and approved by the United States Intelligence Board in a matter of hours.

The danger of such intelligence production by conference and committee lies not in complexities of procedure but in over-zealous efforts to hammer out a consensus. This could result in "lowest common denominator" intelligence to irritate rather than inform the policymakers. If all contributors to an estimate except one believe that country A will probably be increasingly antagonistic to country B, the substitute of "may" for "will probably" is often a wording that all might agree on. An alternative course would be to reject surface unanimity and instead note the views of the dissenting agency in a footnote. There is a rule of reason that obtains in the matter of dissents: Quibbles about phraseology must not obscure the fact that all are in agreement on the general thrust of the argument. But when there are firmly held differences on important questions, current practice is to allow dissent in the estimates rather than compromise on a watered-down wording.

The National Intelligence Estimate is not analogous to a Supreme Court decision, by which lower courts must abide. Nevertheless, in the stamp of highest authority impressed upon the estimate, there lies the hazard that it may freeze viewpoints throughout the intelligence community. Criticisms and comments from authorities are therefore invited after the estimate is published. On occasion, the criticisms will effect a fresh look at the estimate and result in changes when the estimate is next revised.

With an eye to the next revision, the estimators themselves must critique their own efforts, noting particularly where they were handicapped by intelligence gaps. In a few cases, these gaps can be filled by more intensive collection efforts in the field. Whatever assistance the field can offer, intelligence analysts at home will bend their efforts to initiate research in the areas indicated to the end that successive revisions of the estimate become more convincing approximations to reality.

Procedures for preparing the National Intelligence Estimate may be modified with time, but there is no strong pressure at the moment

for radical changes. In the postwar period, the National Intelligence Estimate has given intelligence a stature greater than it ever had before. More than any other intelligence publication it has promoted the acceptance of national intelligence as an essential ingredient of national policy.

CURRENT-INTELLIGENCE REPORTS

As constant crisis becomes the standard feature of the international scene, the urgent need by policymakers to keep abreast of day-to-day developments makes increasing demands on national intelligence. These demands are met by the media of current-intelligence production, which are not far removed from those employed by American journalism to report current events.

1. *Raw intelligence.* This is equivalent to the radio or television announcement, "We interrupt this program to report that the USSR has just announced the first successful launching of an artificial satellite that is orbiting around the earth. Keep tuned to this station for further details." When the watch officer on duty in a current-intelligence office during the small hours of the early morning receives information of such import that he believes it should be passed quickly to higher officials, he will do so without interpretive analysis. He may also explain that the desk analyst is being called in and that interpretive comment will follow shortly. The alerting of high officials by the rapid dispatch of vital information—with or without analysis—is an essential function of the current-intelligence office.

2. *The written memorandum.* This format is employed for analyses which are not conveniently accommodated in regularly scheduled publications. One reason is that of time: The daily publication has been "put to bed"; it is too late to rerun the presses, but high officials must have the information and commentary before them as quickly as possible. The written memorandum also serves as the outlet for the analyst who wishes to advance a thesis that may be too speculative for formal publication but nevertheless deserves consideration. Sometimes, when there are differences of view among analysts of an agency, the interchange of memoranda is a preliminary to the achievement of consensus.

3. *The oral briefing.* The oral briefing is frequently used to save time. The desk analyst reads the intelligence information and hurries over to the higher official's office or home to give his quick estimate of its significance. Sometimes oral briefings are regularly scheduled for the benefit of officials who like to get at problems through the person-to-person back and forth of question and answer.

4. *The daily publication.* The aforementioned media for disseminating current intelligence do not lend themselves to the inter-

agency coordination required for the production of true national intelligence. They rather present the point of view of a single office or analyst. Intelligence produced on the national level appears in the formal publications. Members of the National Security Council and other high officials, for example, receive copies of a daily report in whose production the various member departments and agencies of the intelligence community participate jointly. This is the daily newspaper, so to speak, of the intelligence community, with the distinction that interpretative commentary is a more prominent feature of the intelligence publication than of the front pages of the news daily. In the case of current intelligence, the pressures of time are frequently a handicap to the production of complete analyses on a coordinated interdepartmental basis, and policy officials find the analyses published by the individual agencies a valuable backup to the joint product.

5. *Other periodic publications.* The weekly, biweekly, and monthly current-intelligence publications, analogous to the magazine supplements of the large city daily, summarize and analyze recent events from a vantage point which provides better perspective than is possible when writing for the daily publication. Here, too, policy officials lean heavily on analyses produced by individual agencies. However, some standing committees of the United States Intelligence Board produce periodic publications containing the views of the intelligence community as a whole on current-intelligence developments.

6. *The National Intelligence Estimate.* This format is employed not only for the long-range strategic estimate but, on occasion, for a "crash" estimate. When current developments reach crisis proportions, the National Security Council or the United States Intelligence Board may direct that a National Intelligence Estimate be prepared quickly to present the consensus of the intelligence community.

THE CURRENT-INTELLIGENCE ANALYST

The outstanding characteristic of current-intelligence production is the demand it makes on the analyst for speed. Like the newspaperman, he must meet a publication deadline every day. The cases in which he is called on to research in depth are rather the exception than the rule. A large part of his activity consists of describing a development and commenting briefly on its significance, all perhaps within the limits of a single page. He may, for example, report the resignation of North Vietnam's Lao Dong (Communist) Party secretary general. By way of comment, he may briefly give some biographic background on the new secretary general, determine on the basis of other posts retained by the former secretary general whether

the resignation signifies loss of real power, indicate who of his associates may have suffered a loss of stature along with him, and suggest who is likely to benefit. If the former secretary general was closely associated with certain policies of the regime, the analyst may offer some speculations on how these policies are likely to be modified.

The analyst's comment has a twofold function: first, to provide the reader with the background (e.g., biographic data on the new secretary general) which will set the bare report in fuller perspective, and, second, to suggest what further developments may follow. The backgrounds function is simple enough for the analyst who is on top of his job. The premonitory function is of quite another order of difficulty; and the current-intelligence analysis, like the long-range strategic estimate, often proposes orders of probability rather than flat predictions.

The library and reference service, which can be extensively employed by the researcher working on a long project, are of limited value to the current-intelligence analyst, who may have to prepare his comments within the hour. He will possibly have time to phone other analysts in the intelligence community who might have information on the subject. By and large, however, he is left largely on his own personal resources—the data he has accumulated in his immediate files and the knowledge in his head. The current-intelligence analyst must therefore be the substantive expert in his area. He does not have time to learn while working on a project. He must rather bring the knowledge he already has to bear on his analysis.

The necessity for quick analysis places a premium not only on substantive knowledge but also on verbal fluency. The current-intelligence analyst has to write well while writing quickly. The importance of writing aptitude is so high, in fact, that many senior officials prefer to hire as apprentice current-intelligence analysts young men with writing aptitude who will learn the substance of their fields rather than substantive specialists who have difficulty with verbalization.

From the foregoing, it is apparent that the person who takes to current-intelligence analysis is continually sensitive to signs of change. Yet, he is uncomfortably aware that, like the financial analyst who does not identify a bull or bear market until it is under way for some time, he too will not often identify a trend at its very inception. Liberalization during 1956 in the Communist world was aborted following the Hungarian revolt and other demonstrations of popular unrest in Eastern Europe. The shift toward orthodoxy was all the more difficult to identify because of crosscurrents in the Communist camp. Mao-Tsetung was preaching the virtues of letting "a hundred flowers bloom" months after the shift from liberalization had begun in the Communist world at large. To revert to our stock-market analogy, industrial

stocks were sliding while the rails were still heading up, and it was hard to establish that a bear market was in the making. The acute analyst is the one who identifies the trend before the public at large does.

The sixth sense which the current-intelligence analyst hopes will quickly tell him the direction of developments is a compound of background knowledge and constant scanning for significant details. The failure of important officials to make public appearances is the classic if overworked example of the information the current-intelligence analyst is constantly on watch for. If a new politburo and central committee has just been elected, he is quick to note the order in which the members are listed. He is, more than other analysts, the slave to his in-box. For his work is never to miss what is happening now, and always to explain what is happening now in the light of what happened before and as an augury of what will happen later.

PAST FAILURES OF CURRENT INTELLIGENCE

Postmortems reviewing past failures of current intelligence frequently show that the weaknesses lay not so much in the unavailability of information as in faulty analysis. "It is often harder," Allen Dulles has said, "to use the product than to get it." A case in point is the Rundstedt Raid of December 1944, when the Germans launched an attack with 24 infantry and armored divisions on a 50-mile front to a depth of 60 miles. Sufficient information was collected prior to the assault to show that extensive German preparations were under way, and intelligence at the Army level did in fact predict the attack several days in advance. Intelligence at higher levels, however, reversed the judgment, concluding that the Germans were most probably only strengthening their defensive positions.

On some occasions, the failure of current intelligence was attributable to the failure to convince policymakers. Stalin, for example, took a consistently negative attitude toward reports indicating an imminent German attack in 1941. Hitler, similarly, ignored forewarnings of the Anglo-American landing in North Africa.

The most disastrous failure of current intelligence in U.S. history was the unexpectedness of the Japanese attack on Pearl Harbor. Here, again, there appears in hindsight to have been sufficient information available to alert intelligence officers and policy officials. There was, however, no full appreciation of the significance of the information. There was, further, a failure to get the intelligence information to all the quarters that should have had it. It was known, for example, that the Japanese consulate in Honolulu was sending messages to Tokyo on the location of ships in Pearl Harbor. It was

known in early December that the Japanese Embassy in Washington had been ordered to burn its communications codes. It was known that Tokyo had told its diplomats in Washington that a deadline had been set for the completion of negotiations with the United States. It was known that the Japanese were continuing negotiations in Washington in early December for the purpose of averting American suspicions. It was known that Japanese military doctrine set great store on the virtue of surprise attack. It was, however, the general assessment in Washington that Japanese military action, if it came, would be in the Far East. It was, moreover, not deemed necessary to keep the military commands in Hawaii fully apprised of the intelligence information collected. As a consequence, there was no appreciation in Hawaii of the ominous significance of developments just prior to the attack on 7 December, such as the entry of a two-man submarine in prohibited waters off Pearl Harbor and the appearance of unidentified planes on the Army radar screen.

INDICATIONS ANALYSIS

Pearl Harbor impressed many intelligence analysts with the need for developing a doctrine for identifying the symptoms of impending attack. A study of past wars, together with some introspection on logical courses of action in future wars, will soon suggest to any thoughtful person some likely symptoms: instructions to burn codes, withdrawal of financial reserves held in foreign banks, recall of merchant shipping to home ports, official warnings that specified acts will be followed by retaliation, callup of military reserves, accelerated stockpiling of strategic materials, intensification of vituperative propaganda, to name a few of the more obvious symptoms. None of these are essential preliminaries to an attack, and all of them may appear without necessarily presaging hostilities. Their appearance, however, must serve as an automatic alert to the intelligence community.

The sophisticated analysis of these symptoms requires also a recognition of evidence which points to the continuation of peace: the deposit of funds abroad, demobilization of armed forces, withdrawal of troops from frontiers, cessation of bellicose propaganda, to name a few examples. The analyst here has to be on guard against deliberate deception. While a break in the diplomatic negotiations between the United States and Japan before Pearl Harbor would have been a suggestive symptom of early hostilities, the continuation of the talks was hardly reassurance to the contrary. It rather represented Tokyo's effort to allay American suspicions while the Japanese fleet was steaming toward Pearl Harbor.

The watch for symptoms—or indications, to use the favored terminology—has virtually become a specialization within the current-intelligence specialty. The indications approach is a counterbalance to the expert's predisposition to reject deviations from known trends until new trends have been firmly established. This is a predisposition which is likely to be reinforced by the experience that such an expert turns out more often to be right than wrong, just as the weatherman in many climates can be more often right than wrong if he always predicts today's weather for tomorrow. Unfortunately, the analyst who is unconsciously given to this sort of pragmatism is most likely to be wrong when it is most important to be right. The responsible area analyst values the stimulus of the indications specialist who is disposed by his function to wild surmises and, like a Socratic gadfly, forces the expert to examine carefully—not cavalierly to explain away—each new symptom of impending hostilities.

The area analyst's particular contribution, in turn, derives from his expert knowledge of background evidence outside of pure indications intelligence. Intensification of civil-defense training, for example, is susceptible to offensive or defensive interpretation. The preferred interpretation will depend in large part on considerations of setting and milieu: Would opposition political parties stand behind the government in a war situation? Are economic-development objectives a discouragement to military adventures at this time? Does the country enjoy the full backing of its allies?

THE WATCH COMMITTEE AND NATIONAL INDICATIONS CENTER

Indications analysis is in large part a constant watch for the steps, short of war readiness, which a country must take to be ready to strike. Its usefulness diminishes insofar as the country in question is already on a war footing in a situation of constant crisis. Its limitations are particularly obvious in small areas of localized tension, where the capabilities for attack are complete and only the decision to attack is in question. Despite these shortcomings, indications analysis must be pursued as a necessary guard, though hardly a guarantee, against another Pearl Harbor. A considerable part of the national-intelligence effort, therefore, is devoted to the watch for symptoms of imminent hostilities.

The mechanism for integrating departmental opinions on the significance of these symptoms into a national-intelligence analysis is provided by the Watch Committee, one of the standing committees of the United States Intelligence Board. At Watch Committee sessions, attended by senior officials from the Central Intelligence Agency and other intelligence organizations, each new symptom of impending hos-

tilities observed since the previous meeting is considered and a conclusion reached regarding its bearing on national security. The conclusions, published in a report as the consensus of the intelligence community, represent as authoritative a determination of prospects in the coming days as is the National Intelligence Estimate of longer range prospects.

Working under the Watch Committee on a round-the-clock basis is the National Indications Center, composed of indications specialists from the various departments and agencies. The center is the constant recipient from the departments and agencies of all intelligence suggestive of possible hostile intent, together with their evaluations. This intelligence is collated in the center as a basis for the agenda of the next Watch Committee meeting. In addition, the center engages in continual analysis of its own based on its long experience with indications patterns in past crises.

The machinery for current-intelligence production, including indications analysis, reflects the ever-growing appreciation of the need for advance warning. The machinery is yet to be tested fully, but it has been called on to function in recent "flap" situations (Suez and the Chinese offshore-island crises, for example). The importance of its assigned role in national intelligence is not seriously questioned in an age when the time required between the launching of an attack and the delivery of the blow is being steadily compressed. Under these circumstances there is little alternative to the development of techniques that will provide all possible forewarnings of decisions to strike.

BASIC SURVEYS

The most critical gap in American intelligence during the planning of operations against the Gilbert Islands in 1943 was the lack of precise hydrographic data. The available charts were so out of date and inaccurate as to be worse than useless. Tide tables were extremely sketchy. Yet information on the surrounding waters was vital to the success of the proposed amphibious operations, which would involve decisions on such matters as the best type of landing craft to get the troops ashore with minimum danger of capsizing or grounding. The intelligence gap was never satisfactorily filled, and a considerable part of the heavy casualty list on Tarawa was attributable to the inability of landing craft to traverse the reefs off the landing beaches. The American dead on Tarawa lay as mute testimony to the vital importance of accurate basic intelligence.

A synthesis of the fundamental facts and features that make up the character and body of a country and its people, basic intelligence

is slow to change but not changeless. Like the *World Almanac* and the *Encyclopaedia Britannica*, basic-intelligence handbooks must be periodically revised. By and large, however, basic intelligence is relatively stable because it is largely descriptive and comparatively static rather than reportorial or premonitory in content. Its time range is from past to present, in contradistinction to current and estimative intelligence, which is vitally concerned with the present and likely developments in the immediate or longer range future. This is not to say that basic intelligence is devoid of analysis. Like the better encyclopedias, it also interprets the data it presents.

In modern times, basic intelligence has been called upon to make valued contributions to military planning, and most European countries have long supported a considerable basic-intelligence effort. Sherman Kent's outline of the table of contents of a German handbook suggests some of the general areas of study which basic intelligence encompasses.

I. *General Background*. Location. Frontiers. Area. History. Governmental and Administrative Structure.

II. *Character of the Country*. Surface Forms. Soils. Ground Cover. Climate. Water Supply.

III. *People*. Nationalities, language, attitudes. Population distribution. Settlement. Health. Structure of society.

IV. *Economic*. Agriculture. Industry. Trade and Commerce. Mining. Fisheries.

V. *Transportation*. Railroads. Roads. Ports. Airfields. Inland Waterways.

VI. *Military Geography*. (Detailed regional breakdown).

VII. *Military Establishment in Being*. Army: Order of Battle, Fixed Defenses, Military Installations, Supply. Navy: Order of Battle, The Fleet, Naval Shore Installations, Naval Air Supply. Air: Order of Battle, Military Aircraft, Air Installations (See List of Airdromes, etc. in Special Appendix), Lighter than Air, Supply.

VIII. *Special Appendixes*. Biographical data on key figures of the government, Local geographic terminology. Description of rivers, lakes, canals. List and specifications of electric powerplants. Description of roads. List of airdromes and most important landing grounds. List of main telephone and telegraph lines. Money, weights, and measures. Beaches (as for amphibious military operations).

In postwar periods, extensive reliance has been placed on basic intelligence by those responsible for negotiating and administering the peace. The British delegates to Paris at the end of World War I,

for example, were equipped with so-called peace handbooks, which summarized the ethnic, economic, and political problems of the areas which were to be affected by the redemarcation of new frontiers. The texts of treaties and other state documents were also included in the handbooks. All the trouble spots of the continent were examined in historical perspective—Alsace-Lorraine, Silesia, the Dardanelles. Similar background studies, in varying degrees of detail, were also available to delegates from other countries. Their preparation before all international conferences is essential if the delegates are to be equipped to discuss the issues intelligently. It is hard to imagine, for example, a disarmament conference whose delegates did not come forearmed with basic intelligence regarding the armed-forces strength of the other countries in both men and equipment, the positions of these countries on disarmament issues in past conferences, signs of softening or stiffening of their national policies, and the prevailing military doctrines that would affect their preferences for one sort of arms limitation rather than another.

Basic-intelligence handbooks also served in postwar periods as aids to military-government personnel charged with administering the peace in occupied countries. Though the content of these books was not far removed from the content of those employed to aid military strategy, they served dissimilar ends. Railroads, ports, and industrial installations were now studied, not as targets for attack but for their serviceability to occupying forces and for their essentiality to the occupied economy. Military-government handbooks took note of popular sensibilities that should not be offended rather than popular characteristics that might be exploited for social subversion.

The amount of basic intelligence accumulated over recent years is so large that only a part of it is contained in formal studies. The files of the intelligence community's central reference services are mines of information that can be collated on an as-needed basis. Electronic data-processing methods have blurred the distinction between the cards of the central reference services and so-called finished intelligence. For, within the day, the cards can be run and rerun to yield printed listings with accompanying descriptive data of personalities and major industrial targets for military attack, to name but two of many possibilities.

The advantage of maintaining basic intelligence in a form that lends itself to automatic data processing is the ease of continuous revision. The listing of powerplants, municipal utilities, pipelines, mines, celestial observatories, etc., contain all the data known to date, not merely the information available to the time the last handbook was written. This technique for basic-intelligence presentation, however, is less useful when textual rather than tabular expositions

are called for, as, for example, in studies of social and psychological characteristics.

JANIS IN WORLD WAR II

The battle for Tarawa was one of several occasions which highlighted America's lack of foresight before World War II in failing to build up its basic-intelligence library. In the early war planning for North African operations, American officers had fortunate access to ISIS (Inter-Service Intelligence Studies), the coordinated basic-intelligence studies of the British. It became apparent that a similar effort was needed for Pacific operations, and, at the President's direction, the Joint Chiefs of Staff created a Joint Intelligence Study Publishing Board to produce the so-called JANIS (Joint Army-Navy Intelligence Studies). The JANIS volumes provided officials and intelligence research analysts toward the end of the war with detailed information on the historical, geographic, political, economic, military, and sociological backgrounds of the areas studied.

The JANIS volumes were a wartime stopgap. It was widely realized that basic intelligence must be produced in peacetime and be kept revised and ready for use in a national emergency. In addition the qualified character of the postwar peace heightened the general receptivity to a basic-intelligence effort that would serve nonmilitary operations such as propaganda, foreign-aid planning, and economic warfare. In 1948 the National Security Council authorized publication of a basic-intelligence series called the National Intelligence Survey (NIS).

THE NATIONAL INTELLIGENCE SURVEY

As in the case of a National Intelligence Estimate, members of the intelligence community contribute chapters in their special fields of competence to the National Intelligence Survey for each geographic area. The Army, for example, is responsible for covering terrain features; the Navy, for ports and harbors. The Central Intelligence Agency is responsible for coordination, editing, publication, and dissemination of the surveys. General policy and requirements with respect to the NIS program are set by the National Intelligence Survey Committee, a standing committee of the United States Intelligence Board.

The agency contributions to an NIS are, in most cases, organically separable and can be published separately rather than integrated into a composite production like the National Intelligence Estimate. In coordinating the contributions, CIA must check that they are consistent with each other, but there is not the welding into an organic whole

that characterizes the National Intelligence Estimate process. Similarly, when the surveys are revised, the revisions are edited and published subject by subject. For affording basic intelligence which is as up to date as possible, this procedure has clear advantages over any that would delay publication of the entire NIS until all contributions were in.

Since the NIS series was inaugurated, comprehensive digests of basic intelligence have been prepared and published, subject by subject, for each of the major countries and most of the lesser countries of the world. The uses to which the surveys are put are varied. Intelligence trainees find them excellent for orientation in their new areas of responsibility. Diplomats study them with equal profit prior to their departure for new posts abroad. Analysts refer frequently to the surveys for ready answers to spot questions. (What gauge are the rail lines on Shikoku?) Military officers employ the surveys as standard references in the formulation of war plans. At the NSC level, the surveys are not studied in all their detail, but chapters giving an overview of a country have proved serviceable to high officials.

IV

SUBJECT-MATTER SPECIALIZATION

National intelligence is a synthesis. It is compounded of information from virtually all the academic disciplines—sociology, history, geography, economics, political science, military philosophy, the natural sciences, and others. Intelligence officers are ordinarily specialists in one of these categories, although they may be competent in more than one if their responsibilities happen to be limited to small geographic areas. Even in the latter case, it is rare for high competence in the social sciences to extend to the military and natural sciences as well, so that specialization by subject category is as much the rule in intelligence today as it is in the academic world.

National Security Council directives have established the responsibilities of each of the organizations in the intelligence community for producing the various subject categories of intelligence. Over the years, these categories have become differentiated by specialized techniques of collection and production.

POLITICAL INTELLIGENCE

Peace, to turn an aphorism from Clausewitz, is in some lights a continuation of war by other means. The military strategy and tactics of wartime give way to the political policy and maneuver of peacetime, and political intelligence comes into its own in the councils of the country's highest officials.

One of the principal handicaps of the political intelligence officer is the difficulty of quantifying his data. Economic intelligence may not be the more accurate for its statistics of production and commerce. Military intelligence may be in error despite the pretensions to exactness in its arithmetical magnitudes of estimated troop strength. But accurate or erroneous, they provide numerical orders of strength and weakness. Estimates dealing with political dynamics, by contrast, deal with the immeasurable and the imponderable; the policymaker must accept intelligence which lacks the precision he would like. Peasant attitudes may be described as apathetic or sullen, and no fine measures may be available to suggest the degree of popular hostility to a regime.

It follows that skill in verbalization marks the political analyst more than it marks any other intelligence officer. His expositions are textual rather than tabular. Less able to draw on numbers, he relies on precision of language to communicate intelligence on the subject in his purview. A few examples will suffice to illustrate the range of this purview.

1. *Loci of power.* The equilibrium of a regime may rest on the precarious balance among the contenders for leadership. The political analyst strives to understand who and where are the centers of political power. In the jockeying that followed the death of Stalin, the relative strengths of Malenkov, Molotov, Bulganin, and Khrushchev were not always self-evident. The influence of the army in political councils was sometimes in question. Although the Communist Party is invariably the most powerful political force in an iron-curtain country, the prestige of the party varies among the satellites. Within the party, the Central Committee may sometimes constitute a true electorate to which political rivals must appeal; at other times, it may be only the echo of a personal dictator.

2. *Popular attitudes.* The occasions when popular hostility is clearly revealed in the fierce glow of open revolt are comparatively infrequent. More often, the political analyst must sift a regime's claims of popular support and equally suspect charges by emotional critics. The regime's own propaganda sometimes speaks most eloquently on the subject. Harangues against "hooliganism" of youths, "conservatism" of peasants, "local chauvinism" of ethnic minorities, attest clearly to grievances and unrest.

3. *Domestic programs.* What is the progress of antireligious campaigns? of collectivization drives? of literacy and education movements? Here the political analyst can sometimes quantify his intelligence by estimates of the amount of church lands confiscated, the number of peasants enrolled in collectives, the number of graduates from college-level institutes. The political analyst is alert to advances and retreats in domestic programs as they lend credit or discredit to the regime. He is also alive to shifts in the programs for their bearing on the political fortunes of their sponsors.

4. *Foreign policy.* Perhaps no phase of political intelligence bears so heavily on U.S. security interests as intelligence on foreign policy. Supported by his understanding of the basic foreign-policy objectives of a nation, the political analyst keeps abreast of tactical shifts on such issues as disarmament, German unification, Arab nationalism, U.N. membership for Communist China, ideological conformity among the Communist satellites.

In view of the broad range of his interests, the political analyst has to be catholic in his use of collection sources. Overt information

(Khrushchev's speech denigrating Stalin before the 20th Party Congress, the texts of state communiq  s, and party pronouncements on doctrine, for instance) constitute perhaps the bulk of his background knowledge. The diplomatic cable or dispatch reporting conversations with foreign-ministry officials is an essential source of information on foreign policy. Other commentaries from Foreign Service officers are also welcomed, coming as they do from specialists who cannot engage in clandestine activities but whose legitimate duties keep them among the best informed on political trends. Reports from clandestine services are a necessary supplement to overt information on those subjects where official frankness is the exception rather than the rule, e.g., popular unrest, jockeying by rival power cliques, secret treaties, etc.

BIOGRAPHIC INTELLIGENCE

Our understanding of events is furthered by our knowledge of the men who shape them or who at least participate in them. With every election, every revolution, and every reshuffle of ministries, intelligence must be prepared to describe the emergent personalities: who they are and what they stand for. If the intelligence organization is on its toes, the job was largely done long before. For biographic intelligence entails not merely the accumulation of information on the prominent. It includes also personality dossiers on the obscure and the underlings, whose characters and experience are matters of record before they make the front pages.

Since it is impossible to keep a dossier of every one of the nearly 3 billion persons in the world, is biographic intelligence likely to draw a blank for individuals who become prominent overnight? In the case of persons who advance quickly to political power, the gaps are comparatively rare. The new faces that appear in politburo ranks after periodic reshuffles are not of people new to the party. They are of Communists who have made some mark in subordinate positions, perhaps in the provinces. If their previous jobs in the party were a matter of any record at all, their names must appear in the personality dossiers. Biographic intelligence may indeed not be fully forearmed to cope with military revolts that raise junior officers (say, a Sergeant Batista) to power. But if the personalities involved are middle or high ranking, their dossiers should be reasonably full. And if the revolution is any time at all in the making, biographic intelligence should not be taken by surprise. Castro was hardly an unknown when the Batista government fell in Cuba.

Much of biographic intelligence consists in the mere chronological tabulation of significant events in a man's life: his appointments to

party and government positions, his resignations, illnesses, trips, and notes on his presence or absence at public functions. No unusual analytical abilities are required to handle the compilation of such data. It is a job of typing and filing, cutting and pasting. The trained biographical analyst, however, is several cuts above a clerk-typist. Hardly content with a who's-who enumeration of skeletal facts, he endeavors to portray the rounded man—character, ambitions, opinions, weaknesses, friends, relatives, and particular allegiances in the network of cliques that may cut across the formal structure of party and government. He is prepared, of course, to give *World Almanac* answers to such questions as "Who is currently secretary of the Afro-Asian Solidarity Committee?" But he also stands ready to include premonitory elements in his report—the nature of the policies to be expected from de Gaulle, for example, in the light of what the French leader himself has said and of other information compiled about him.

Useful as are the dossiers of middle-ranking personalities against the day when one of them emerges into the front rank, biographic intelligence also needs to speculate beforehand on the likely successors to top leadership. Who will follow the aging Mao Tse-tung as the leader of Communist China? While the element of conjecture here is considerable, it is limited at least by the fairly narrow slate of likely candidates—say, the membership of the politburo, or, narrower still, of the politburo's inner circle known as the standing committee. The principal difficulty is that, while the candidates are few, the outcome may hinge on the distribution of their supporters in the rest of the politburo, the central committee, and perhaps other organs of the party. Biographic intelligence must, therefore, determine who is likely to support whom. Known friendships, family ties, or presumptive obligations resulting from sponsor-protégé relationships in past jobs are necessary elements in the analysis. A careful study of public remarks may be useful. Which members of the central committee seem invariably to echo Chou En-lai's statements on major issues? Which seem to incline to Liu Shao-chi's phrases? The imponderables loom large in such an estimate, but the issue is too important to forego analysis.

MILITARY INTELLIGENCE

The military posture of a country is so large an ingredient of its strategic stature that even peacetime estimates require extensive analysis of armed-forces intelligence. It is an awkward fact, however, that armed-forces intelligence in peacetime is, in many respects, more difficult to come by than during war. Scouting parties, operational probes, prisoner-of-war interrogation, aerial reconnaissance, and cap-

tured equipment often yield prolific data during hostilities. Information passed openly to military attachés and others is no adequate substitute during peace.

A large part of the man-hours expended in a military-intelligence organization goes into the pick-and-shovel work needed to uncover the organization and administration of the foreign military services. The result should be a knowledge of the military structure from the ministry level down through the various levels of territorial and tactical organization. If the information available is fairly complete, the intelligence organization will come up with a reasonably good picture of the relationships among the high commands; the division of the country into corps areas, fleet commands, air commands; the location and function of unit headquarters, depots, airfields, and other installations; numbers and distribution of personnel; and weapons, vehicles, and other equipment.

The compilation of the aforementioned data will delineate the anatomy, so to speak, of a foreign military establishment in its physical setting. To some extent, this enumeration of tangible specifics will throw light on the effectiveness of the armed forces. But to round out the picture, attention must also be directed to the intangibles. This necessitates, for example, an evaluation of morale, of training methods, and of tactical and strategic doctrine. Methods and doctrine will be considered as they bear on the employment of particular weapons and on the employment, singly and jointly, of the various arms and services. In the purview of the evaluation will also come practice and principles relating to reconnaissance, river crossings, guerrilla warfare, airborne operations, surprise attack, and civil defense.

Intelligence on logistics requires a consideration of tangibles and intangibles combined. Requirements for rations, fuel, ammunition, medical supplies, and other materiel must be computed. Calculations must be made of the number of trains, ships, trucks, aircraft, and other transport units needed to move men and equipment under given circumstances. Requirements must be matched against assets, with appropriate consideration of vulnerability to interdiction.

The "flaps" in military intelligence occur when new activity is disclosed—movement of troops to frontiers, increase in artillery exchanges between unfriendly forces, transfer of military equipment from one nation to another, and testing or introduction of new weapons, for instance. As often as not, military intelligence alone is not competent to make the evaluation. A joint consideration with political and other analysts is called for to appraise the full significance of the new activity. The jeopardy to Middle East peace of Communist military shipments to the United Arab Republic, for example,

is to be assessed in the light of the political as well as military factors operative at the moment.

GEOGRAPHIC INTELLIGENCE

The geographic intelligence officer works in macrocosm and microcosm. His study may encompass an analysis of the entire Soviet Arctic. It may, on the other hand, require a description of a small town in the Communist bloc—down to lining up each building, detailing the number of floors, and giving the postal addresses.

Some of the data that the geographic intelligence officer would like to have for his studies are closely held by foreign governments. Much of his work, however, consists in collating open source materials. The quality of the work depends in considerable measure on the resources of the map libraries that geographic intelligence maintains.

With the help thus of open source and classified materials alike, geographic intelligence is informed on topographical features (e.g., relief, landforms, drainage patterns), and it understands which areas offer the weakest natural defenses against assault. It has information on weather and climate (temperature, precipitation, clouds, fog, humidity, and winds) and can say when typhoons would be a menace to say Chinese Communist amphibious operations again Taiwan. Its data on urban areas are adequate for estimates of defensibility and trafficability (street patterns, types of building construction, location of utilities and other vital installations, and distribution of population). It has compiled information on coasts and landing beaches, including tidal data, gradients, underwater slopes and obstructions. Its studies of railways spurs and other features of the transport system contribute to knowledge of probable missile site locations.

Geographic intelligence often has to map and describe the locational patterns of disidence, religious affiliation, and other social characteristics bearing on the political reliability of populations. To serve officials who are deciding on a policy position with respect to an international boundary dispute (e.g., on the Sino-Indian border), geographic intelligence will provide information on historical jurisdictions, natural watersheds, main lines of access, ethnic characteristics of local populations, and other relevant considerations. Geographic intelligence assists economic intelligence officers by preparing land-use maps and studies, by showing major traffic and commodity flow patterns, and by detailing other locational factors (altitude, temperature, rainfall) that influence productive activity.

As modern weapons extend their long reach, geographic intelligence finds frequent occasion to collaborate with scientific intelligence. The manned aircraft of World War II could seek out targets whose loca-

tion was not precisely known. The launchers of ballistic missiles must know exact locations on a planet that is still imperfectly mapped. These and related problems have brought geographic intelligence far beyond the limits that Moses set in 1500 B.C. when he sent his spies into the land of Canaan: "Go up into the mountain and see the land, what it is." The geographic intelligence office that studies "the land, what it is" today is abreast of developments in geodesy, oceanography, climatology, gravimetry.

SCIENTIFIC INTELLIGENCE

There is some overlap in practice between scientific intelligence and technical intelligence, and it is convenient here to consider both together. Technical intelligence, as it is defined in the *Dictionary of United States Military Terms for Joint Usage*, concerns foreign technological developments which have advanced to the point of having a practical application for war purposes. Scientific intelligence covers technological developments also, but only up through the research and development phase. In addition, its scope includes areas of research that transcend the strictly technological and the strictly military, e.g., mathematics, medicine, solid-state physics, enzymology, radio astronomy, and oceanography. Technical intelligence is a responsibility of the military services. Scientific intelligence may be collected and analyzed by other organizations, e.g., the Atomic Energy Commission.

The growing importance of scientific and technical intelligence hardly needs to be labored in an age when national security is so closely related to advances in nuclear physics, rocketry, electronics, and medicine, to name only several of the fields marked by dramatic "breakthroughs" in recent years. Even in the 19th century, the importance of technical intelligence was widely appreciated. Some of the information which Dreyfus was unjustly accused of passing to the Germans dealt with the design of a new artillery-recoil mechanism.

The widespread concern over enemy "secret weapons" at the beginning of World War II gave strong impetus to the expansion of scientific and technical intelligence in both the Axis and Allied powers. Reports in the files of British intelligence when the war began, for example, indicated German development activities on gliding bombs, pilotless aircraft, long-range guns, and rockets. The war was less than a year old when the British became convinced that the Germans had developed radio beams for blind bombing.

The discovery of the beams by the British is illustrative of the manner in which scientific intelligence frequently combines the usual sources of intelligence information (agent reports, overt publications, etc.) with technical means for confirming the information. In this

case, the technical means involved the sending up of search aircraft, which detected the German beams in the expected place and at the expected frequency. German aircraft, with receivers ostensibly designed for blind landings, had been able to fly over the British Isles at night and drop their bombs at the intersection of the beams on pre-selected targets. After the British uncovered the beams, however, they were able to jam them and confuse the German night bombers.

The spotting of German radar stations again illustrates the combination of technical and traditional methods of intelligence collection. Photo reconnaissance and the radio detection of radar stations while they were transmitting uncovered most of the coastal radar. In the case of the inland transmitters, the British could determine general locations by taking radio bearings. Agents were then directed to pinpoint the inland stations, after which further details were obtained by photo reconnaissance. By these methods, British intelligence located more than 740 German radar stations on the continent, leaving not more than 6 to be uncovered by the ground forces after D-Day.

SOURCES OF INFORMATION

Like the other intelligence categories, scientific and technical intelligence maximizes collection from overt sources. Since the death of Stalin, the number of Russian scientific and technical journals allowed to circulate in the West has expanded. The Library of Congress publishes a "Monthly Index of Russian Accessions," which gives the title of all articles and books received. Specialized bibliographies and indexes are also published by other libraries, e.g., the National Library of Medicine.

The limited Russian-language competence in American scientific circles has spurred the initiation of various translation and abstracting programs. The *Chemical Abstracts*, *Excerpta Medica*, and the *Biological Abstracts* are among the best known résumés of Russian articles. For those with some Russian-language competence, the abstract journal *Referativnyi Zhurnal*, published in the U.S.S.R., is often a timesaver. Whether read in the original or in translation, the foreign journal remains perhaps the principal source of information on scientific and technical accomplishments abroad.

In the overt category may also be placed information gleaned from public displays of equipment and accomplishments. May Days, for example, frequently provide the occasion for such displays, intended often to impress foreign as well as domestic spectators. From flybys of military aircraft, trained observers may be able to determine whether there are unusual design features that would permit super-performance. It may be possible also to determine if the engines are

equipped with afterburners and to estimate how much thrust augmentation the afterburners provide. It may also be possible to estimate the weight and unaugmented thrust of the engine.

The covert collection of scientific and technical intelligence is handicapped by the extraordinary secrecy that surrounds the obvious targets of the clandestine services. To aggravate the difficulty, the secret agent who is also a trained scientist (a Klaus Fuchs or a Bruno Pontecorvo) is a rare find. When the combination occurs in one person, he can, of course, be of outstanding value.

Scientific intelligence is commonly accorded a higher order of credibility if it is acquired by technical methods. For example, 1-kiloton nuclear explosions in the atmosphere up to fairly considerable heights can be detected by acoustic waves. Even smaller explosions in the oceans can be detected by hydroustic methods. For underground explosions or for explosions under waters not linked hydroustically with the oceans, detection is possible by seismic methods. The analysis of radioactive debris has the advantage of enabling distinction between fission and fusion explosions.

PERSONNEL

The scientific-intelligence officer is, of course, himself trained in science. His talents need not run along lines that result in creative contributions to scientific knowledge, but he should be able to appraise the significance of such contributions for national security. He may, in many cases, be able to draw on the consultative services of eminent experts; he will have to talk with them in their language and hold his own with them. At the other end, he will try to avoid technical language, so far as possible, when he presents his conclusions to policymakers and operating officials. He needs this talent for minimizingargon far more than does the political analyst or military-intelligence officer, who speaks to policymakers or commanding officers pretty much in their own language. A working solution to the language problem may sometimes be to combine a short intelligence report to the policymakers with a detailed technical supplement.

While access to expert consultant services offers demonstrable advantages, the scientific-intelligence officer may be justified in reposing greater confidence in his own conclusions. An occupational failing of experts—though they are right more often than not—is to be heavily influenced by their own particular lines of research when called on to assess possibilities in foreign countries. British experts in World War II, for example, whose experience with practical rockets was then with those burning cordite in a steel case, looked at photographs of a German rocket at Peenemunde and assessed the weight

at 80 tons. British scientific intelligence, on the other hand, relying in part on reports from agents and prisoners indicating liquid oxygen to be one of the fuels, came up with the much more accurate estimate of 12 tons.

ANALYSIS

Where technical methods of detection are successful, the scientific-intelligence officer is greatly assisted in his analysis. Technical detection, however, is often short of being all-informative. The analysis of radioactive debris, for example, is subject to considerable error for calculating the exact location of a nuclear explosion. In the majority of such cases, the scientific-intelligence officer labors under the standard uncertainties, which will not be resolved by the experimental and laboratory techniques of the natural sciences. He rests his analysis on attaché reports, agent disclosures, propaganda announcements, and the other standard sources. He evaluates the information received for consistency with other known facts. His conclusions are compounded from imponderables, not the measurables he worked with in his academic training.

The scientific-intelligence officer, though he relies heavily on his academic training in the natural sciences, thus finds himself approaching his work in the manner of an investigator in the social sciences. There is indeed no substitute for this approach when the matter under consideration relates to people and institutions. The organization of the Academy of Sciences, the curricula of engineering colleges, the number of annual graduates from technical schools, the transfers of missile technicians to other localities—these are subjects which the scientific-intelligence officer handles with techniques that are common to intelligence analysis generally.

The very speed of technological advance necessitates ever greater emphasis on scientific intelligence in this century. Scientific intelligence will play a role which is trying enough when both the United States and another country have developed a new weapon and American experience can serve as a guide in estimating lines of further advance by the other country. The role is likely to be most critical when the United States is still unsuccessful while a foreign country has succeeded. For the prevailing image is of American technological supremacy, all but the most incontrovertible facts about foreign levels of achievement being received with widespread skepticism. In the ability of scientific intelligence to adduce the facts rests the Nation's security against surprise from new technological threats.

ECONOMIC INTELLIGENCE

It is the magnitude, structure, and rate of growth of foreign economies as they can contribute to military power—economic potential for war—that perhaps occasions the primary interest in economic intelligence. The decisive influence of American economic superiority in the outcomes of World War I and World War II gave rise to a prevailing thesis that a country's success in war depends above all on its conversion of economic resources to combat power. The all-important analysis, in this view, draws not from intelligence of forces in being but of the economic-mobilization base—manpower, stockpiles, and productive capacity over and above what must be drawn down for essential civilian requirements.

With the rise of nuclear power, this view has been called into question. As some analysts envisage the probabilities, forces in being must be the primary determinant in deciding the outcome of all-out nuclear conflict; economic potential for sustaining hostilities is irrelevant in a setting where the mobilization base is doomed to quick extinction. Insofar as nuclear capabilities are a deterrent to all-out war, hostilities are envisaged on the Korean War pattern, which do not call for the total involvement of the economic-mobilization base.

Whatever the merits of this viewpoint, complete destruction beyond recovery of the mobilization base is not universally accepted as a certainty in all-out conflict. In any case economic potential for war need not be equated with the theoretical capabilities of the mobilization base at a given time after D-Day. It can be related as well to the economic base a country is building to support necessary forces in being before the outbreak of an all-out or limited war. When defense production in peacetime has to be on a wartime scale, the economic potential for supporting war, or at least a war posture, must remain a central concern of economic intelligence.

ANALYSIS OF WAR POTENTIAL

The analysis of economic potential for war consists largely in the derivation of measures of a nation's capabilities to supply munitions and military personnel. The measures may be specific or aggregative. Examples of specific measures are shipbuilding capacity, manpower of military age, and petroleum production. The aggregative measures relate to the economy as a whole or to broad sectors of the economy; e.g., indexes of overall industrial production. A discussion of these measures will illustrate the elements entering into economic-intelligence analysis of war potential.

1. *Natural resources.* There are no completely self-sufficient modern economies, but the island kingdoms and smaller nations that

were the great powers of an earlier era are under particular disadvantages today in having to look outside their borders for so much of their raw-material requirements. In addition to mineral resources, the analysis of war potential must consider agricultural resources. Japan's stature as a great power was supported before World War II by her ability to command food imports from Taiwan and the Asian mainland. Her insufficiency of food would be a serious weakness in another war.

Shortages in natural resources can be ameliorated, for a time at least, by stockpiles. Estimates of stockpiles must, therefore, be included in computations of resource availabilities as matched against requirements. Economic-intelligence analyses also give recognition to substitutes in such calculations—synthetic in place of natural rubber, for example, or plastics in place of short-supply metals.

2. *Manpower.* The size of armies is the roughest sort of index to military power, but it has served reasonably well as a point of departure in analysis. The smallest countries cannot have large armies for lack of manpower. The economically backward countries cannot have large armies for lack of means to support them. With more than three times the population of the United States in World War II, China put into the field less than half the men mobilized in the American Armed Forces. It is the large, industrially advanced countries that can mobilize the biggest armies in wartime.

Calculations of manpower availabilities rest, first, on estimates of the total population, classified by age and sex. Men of military age constitute a crucial component of this estimate. Health characteristics of the population are also considered in determining availability for military service. Labor productivity is a factor in estimating civilian labor-force requirements; the lower the productivity, the greater the number that must be kept in the fields and factories. The training and education of the labor force are further factors which limit both the production and utilization of modern weapons. The calculations invariably allow for additions to the labor force in wartime of women, schoolchildren, and retired persons who would normally be outside the labor market.

3. *Industrial capacities.* War-potential estimates rest in largest part on calculations of specific industrial capacities—steel ingot, machine tools, electronic equipment, airplanes, electric power, shipbuilding, munitions, motor vehicles, and others. Degrees of superiority or inferiority are, of course, not shown by mere summations of capacities. In their finest detail, estimates will show the proportion of capacity that can be devoted to war production. The fewer the trucks that must go to civilian customers, the more the army can have and the greater the nation's war potential.

The production statistics published by foreign governments are a major source of estimates of industrial capacity. In recent years, many Communist governments have found their propaganda purposes well served by releasing more detailed statistics of economic achievements and of projections under 5- and 7-year plans. Economic intelligence may have to make its own adjustments to these figures, but they serve as starting points in analysis.

On sectors of the economy for which statistics are not released—airplane production, for example—economic intelligence must employ more indirect methods. Order-of-battle and table-of-equipment information on the air force may provide one basis for an estimate. A listing of known factories with production for each calculated from facts known about plant size, number of employees, or other information may provide the basis for another estimate. If the differences between estimates are not too large, economic intelligence can settle on an approximation.

4. *Transportation.* In 1904 an analysis limited to a consideration of resources, manpower, and industrial capacity would have come up with a higher war potential for Russia than for Japan. But Russia was decisively defeated because she was not able to bring her power to bear in the theater where the contest was decided, the Far East. As this illustration must immediately suggest, comparisons of war potential are meaningful only for given assumptions about the character and locale of the hostilities. China's potential relative to that of Brazil for a war in the Far East is of one order; for a war in Latin America, it is of quite another order.

Transportation constitutes a critical element in assessing a nation's potential for war in a specific theater. The completion in 1953 by Communist China of a railroad to the Indochina border considerably enhanced the Vietminh capabilities against the French. Its greatly expanded merchant marine in World War II enabled the United States to carry its struggle against the Axis powers to two distant, widely separated fronts.

The analysis of transport capacities entails the consideration of such elements as rolling stock (number, type, and size), tonnage of shipping, motor vehicles, speeds, downtimes for maintenance, turn-around times, and port and terminal facilities. In localized wars, none of these elements may be limiting, and the analysis may turn on the carrying capacity of a specific rail line (so many tons each way per day), assuming the diversion of rolling stock from other areas of the country.

5. *Trade.* Whatever the advantages of commerce to a peacetime economy, trade is a precarious asset in war. Hong Kong's food imports from the Chinese mainland are economically advantageous in

peace, a liability when under attack. The economic-intelligence officer, however, is not likely to regard a country's trade pattern as one of the most critical factors in its war potential, for patterns of trade are often adjusted to political or military necessities. The bulk of Communist Yugoslavia's trade was with the Communist bloc before 1948. After the break with Stalin, the West became Yugoslavia's principal market and source of supply, and the shift entailed no serious disruption to Belgrade's economy. Soviet trade with China was small in the 1940's; with a Communist regime in Peiping, the U.S.S.R. quickly became China's main trading partner; when Sino-Soviet party and government relations deteriorated in 1960, Soviet technical personnel were withdrawn from China and the Chinese began to look about for other markets and sources of supply.

In the case of some commodities, however, trade patterns can be fairly rigid. The Chinese Communists might reorient most of the country's trade, but they still had to import rubber from outside the bloc. The analysis here may turn on geography: Are the lines of supply vulnerable to interdiction in a war situation? Insofar as the United States gets its nickel from Canada, the wartime disadvantages may not be serious. Insofar as tin imports must come over long ocean routes from the Far East or South America, the disadvantages may become serious indeed. Trade with nearby, friendly countries is the next best thing to self-sufficiency in wartime. Trade with distant or unfriendly countries may entail heavy costs in convoys and much inconvenience in rationing.

Domestic commerce is subject to much the same analysis as foreign trade patterns. Even in relatively self-sufficient countries, specialization by region is the rule. Concentrations of heavy industry and centers of light industry are separated by varying distances. Certain industrial crops like cotton can be grown only in limited areas. Trade links the regions, determines a country's regional strengths and vulnerabilities, and conditions the economy's susceptibility to disruption when subjected to a given pattern of military blows.

6. *Finance.* Financial analysis has shortcomings for estimating the potential of large capitalist economies in an all-out war. The economic-intelligence officer prefers to make his analysis in real rather than money terms. The assumption is that, by one method of financing or another, industrially advanced countries will command all the economic resources possible when national survival is at stake. The availability of resources, rather than finance, is taken as limiting. This is true also of Communist countries, but here the study of government finances may afford better insights because so much of the countries' economic activities—the amount of new investment in industries, for example—is reflected in state budgets. Communist budgets

thus afford a useful supplement to other areas of study for estimating rates of economic growth and ability to sustain increased military expenditures.

The shortcomings in particular cases of financial analysis under all-out war assumptions may not apply to situations short of all-out war. Where the government has not the strength nor will to commandeer resources and there is strong popular resistance to increased tax burdens or continuing inflationary pressure, the state of the budget becomes a limiting factor on a country's ability to prosecute military hostilities. The strain on the French budget affected the vigor of France's effort to hold its position in Indochina.

Financial analysis is also a useful approach in studying countries which have very little in the way of resources within their borders but, rather, must procure them through trade or aid from abroad. Jordan's dependence on foreign aid to support its armed forces is readily assessed by a survey of its precarious finances. Saudi Arabia's economic potential for war against her neighbors depends on the weapons and equipment she can buy with her oil revenues.

7. *Gross national product.* The most inclusive aggregative measure of economic output is the gross national product—the total value of all the goods and services produced by a nation within the year. International comparisons of gross national product as indicators of war potential are useful, but the sophisticated analyst approaches them with several cautions. The figures, for one thing, are stated in monetary value, and, even under free convertibility of currencies, it is not readily apparent what dollar values should be assigned to say, Bulgaria's gross national product for purposes of war-potential analysis. Are Bulgaria's haircuts to be valued according to the actual earnings received by Bulgarian barbers? If Bulgarian barbers are as efficient as their American counterparts, the procedure understates Bulgaria's output in any comparison with the United States.

Is the overall total or per capita gross national product the more useful concept for war-potential analysis? Again there is no ready answer. Insofar as low per capita figures for Asian countries reflect living standards which regimes cannot further depress, the war potential of those countries is clearly limited. But many of the components of gross national product are more significant as aggregates than as per capita averages. Total numbers of tanks in the armed forces, rather than tanks per capita, are considered when comparing the military strength of two countries.

Analysis of gross national product turns as much on its composition as on its total. The total product is made up of military equipment and supplies, capital goods, consumer necessities and luxuries, and entertainment and other services. The country spending the most on

military goods and services is ostensibly building up its military strength the fastest. On the other hand the amount a country is able to spend on entertainment and other luxury consumption is hardly to be ignored; it represents effort that can be diverted to war production after mobilization. It is perhaps the gross national product exclusive of the amount needed for essential civilian requirements that affords the best measure of a country's ability to produce war goods and services in an emergency situation. The problem is to determine essential civilian requirements. Generally economies with high gross national products per capita are geared to high civilian requirements. This does not mean merely that citizens with high living standards resist deprivations that the poor in other countries will countenance. The very structure of advanced economies entails higher allowances for civilian requirements. Where homes, for example, are fairly distant from factories, more gasoline must be set aside for getting people to and from their jobs than is the case where people live within walking or bicycling distance of their work.

The rate of growth is often an important factor in the consideration of gross national product. Since World War II, the war potential of the U.S.S.R. has tended to rise with the increase in its gross national product. Countries with high rates of growth commonly have high rates of savings and investment. This means that diversion of resources to the military sector will probably necessitate deep cuts in investment funds so that the war effort will entail a sacrifice of high-priority development programs.

WARTIME ECONOMIC INTELLIGENCE

Modern military strategy addresses itself only in part to direct destruction of opposing armies. To weaken the economic base of the enemy has become a primary design in the prosecution of wars. Long-range bombers have to seek out the most important targets in the enemy's economy. Ground forces press toward key industrial centers. Naval vessels cut off essential imports. When war comes, economic intelligence is called on to play a central role in support of the military effort.

The importance of economic intelligence in wartime has grown as the technology of war has enhanced capabilities to reach behind the front lines. The airplane brought war to the factories, and economic intelligence has had to supply the most profitable targets. This has necessitated the compilation of target dossiers—files of factories, refineries, and other installations, with the number of employees, types of products, and other pertinent information. Varying orders of priority have had to be given the targets, the highest

obviously going to those whose destruction would cause the most serious damage to the enemy's war effort. The factors entering into the determination of priorities are several. Are substitutes available? If so, destruction of the plant is not so damaging as it would otherwise be. Are stockpiles available to be drawn on while a plant is being repaired? Or will foreign sources of supply make up for bomb losses? If so, again the plant is not so choice a target. What is the position of the target in the industrial process? Destruction of a spark-plug factory will not ordinarily affect motor-vehicle production so directly as would destruction of the auto plant itself. What is the position with respect to excess capacity? Where factories are not fully utilized, increased production in one will readily make up for the destruction of another.

When the wrong targets are bombed, the losses to the enemy may be matched by compensating benefits. The British air bombardment of Hamburg in the summer of 1943 laid waste a third of the city, but the industrial plants escaped serious damage. The result was the end of a serious labor shortage in the city as store clerks, garage attendants, shopkeepers, and others turned from their bombed-out places of employment to the war industries. War production in Hamburg quickly returned to normal.

Apart from its direct support of military operations, economic intelligence in wartime must make its contributions to recurrent strategic estimates designed to inform the Nation's top officials how well the enemy is doing, how long he may be expected to hold out, and what negotiation appeals he may be most responsive to. The subjects of economic intelligence here are pretty much the same as those described in the preceding section—manpower, industrial production, stockpile reserves, trade, finance, and gross national product. The methods of collection and analysis remain much the same, too, although published statistics may be less accessible in wartime. On the other hand, other sources of information, e.g., aerial photographs, may become more freely available.

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INTELLIGENCE FOR ECONOMIC WARFARE

Economic pressures on the enemy during war (embargo, preclusive buying, and freezing of funds, for example) constitute a standard supplement to military attacks. Economic warfare, in addition, is also applied in situations short of formal war in order to reduce the capabilities of unfriendly nations for aggression.

Economic intelligence has had a close historical relationship to economic warfare. In Britain, the Ministry of Economic Warfare served as the economic-intelligence agency at the beginning of World War II. In the United States the newly created Board of Economic Warfare was charged with responsibility for economic intelligence. Experience has demonstrated the essentiality of accurate economic intelligence in the choice and in the enforcement of economic-warfare measures.

1. *Shipping controls.* Navicerts, ship's warrants, and restrictions on the bunkering of vessels are intended to block cargoes (including those leaving or destined for neutral ports) shipped to or by an unfriendly country. Economic intelligence, often obtained from clandestine sources, is necessary to determine whether cargoes are being shipped on behalf of unfriendly interests. Navy vessels may be signaled to intercept ships on the basis of information provided by economic intelligence.

2. *Blacklists.* Merchants in neutral countries discovered to be doing business with unfriendly countries may be black-listed, in which case exports to them and other business dealings are banned. Economic intelligence is responsible for the compilation of dossiers, which give the names of merchant firms, their nominal officers, the actual ownership, connections with other companies, records of suspect transactions, and other pertinent information.

3. *Export controls.* In war an embargo is invariably imposed on all shipments to the enemy. In other periods of international tension, export controls are imposed on selected items. Economic intelligence is called on to assist in the selection of products whose export would be to the strategic advantage of unfriendly countries. This may involve a determination of those countries' legitimate civilian requirements, so that operating officials may impose quantitative controls on exports of the selected items in excess of those requirements.

4. *Freezing of funds.* When dollar assets of a foreign country are frozen, American banks are directed to permit no transactions in accounts owned by that country or its nationals. Economic intelligence may provide information to show that certain firms have a beneficial interest in accounts apparently owned by others. Swiss businessmen, operating in behalf of Germans, were the ostensible owners of sizable American dollar accounts in World War II.

5. *Sequestration of property.* Enemy nations may seek to cloak their ownership of properties, securities, and other assets abroad. Again, economic intelligence may give information showing the true ownership of these assets.

6. *Preclusive buying.* This operation involves the purchase of items for the sole purpose of preventing their procurement by the enemy. The decision to undertake this expensive operation depends on a determination by economic intelligence that the product is in short supply and is extremely vital for enemy war production. Preclusive buying of wolfram and ball bearings limited the availability of these products to the Germans in World War II.

ECONOMIC INTELLIGENCE IN THE COLD WAR

The Soviet challenge to the West, Nikita Khrushchev avers, is not military. The superiority of the U.S.S.R. will be rather demonstrated, he claims, as it eventually surpasses the West in economic achievement. The contest is in the economic arena; the world will be won by the system with the best production records. There is sufficient plausibility in the argument to stimulate the keenest interest of American policymakers in Communist economies quite apart from any implication for military hostilities.

The elements that enter into a purely economic challenge are much the same elements considered in the section on war potential—man-power, outputs of specific industries, trade, finance, gross national product, and other measures of achievement. But the lines of analysis may take new directions. Rates of growth assume unusual importance, since the Communist challenge of the cold war is the challenge to "catch up." Changes in the composition of Soviet gross national product that reflect increases in the proportion of, say, residential construction, take on the aspect of challenges to the West in the cold-war competition, whatever its significance for war-potential analysis.

Economics in the cold war extends beyond the domestic scene, and economic intelligence follows with particular interest Communist economic appeals to other countries. Trade agreements have their implications for national-security interests; Peiping views its trade pacts with Free-World countries as opening wedges in its drive to win broader international recognition and eventual U.N. membership. Aid agreements have their political aspect. Economic intelligence and political intelligence working together will assess the effects of Communist loans and grants on the bloc's prestige in the underdeveloped areas of Asia and Africa.

The economic effects of American foreign policies are also the concern of economic intelligence. Is American foreign aid to non-Communist governments truly conducive to economic development? Or is it doing nothing better than just sustaining low living standards? Is it impelling a growth momentum that will make the recipient country independent of American economic support in the foreseeable future?

These are the questions that concern economic intelligence in its many analyses in depth for national estimates and other studies and in its day-to-day current-intelligence reporting. Its eye is, of course, always cocked for the menace of hostilities. Economic indicators of possible hostilities, like withdrawals of foreign funds, receive careful scrutiny. War-potential analysis is far from neglected. But economic intelligence is also alert to the economic stature of the bloc as a challenge quite independent of the military threat. As this stature looms larger, economic intelligence plays an increasingly vital role in keeping the Nation's top officials informed of the underlying forces that will decide the contest between East and West.

V

INTELLIGENCE IN THE SPACE AGE

National intelligence in the United States today represents the coordinated views of the intelligence community. Despite the necessity of production on an interdepartmental level, national intelligence is being prepared with reasonable dispatch. Moreover the experience of the community with "flap" deadlines points to an intelligence machinery which can react to crisis situations faster than ever before in American history. The procedures for achieving consensus, nevertheless, do involve some minimum of personal discussions and group verbalization of issues. The human touch is unavoidable and places finite bounds on the speed with which national intelligence can be prepared. Is this speed adequate to needs of an age which is obsessed with the dangers of surprise attack by intercontinental weapons that may be delivered within minutes of their launching?

The answer requires a clarification of the relation between early warning and the intelligence process. The Watch Committee and National Indications Center may apprise the President of signs suggesting preparations to launch missiles against the United States. But when the missiles have left their pads, the responsibility rests on early-warning operations of the military services, with their paraphernalia of DEW and SAGE, the complex of radars, computers, and other electronic mechanisms for round-the-clock surveillance of the air spaces. On the basis of early-warning data, air defense and other decisions will be made in minutes or less. Indeed, decisions like the directions to air-defense installations will be part of the electronic data process itself. At this critical stage, the conventional national-intelligence machinery is bypassed.

The more pertinent question for the space age, therefore, may relate less to the speed of national-intelligence production than of early-warning operations. Levels of scientific achievement in detection devices are clearly of key importance here. Television, radar, infrared detection, surveillance by space satellites, and computations by high-speed computers, rather than human observation and analysis, will yield both the source data and final conclusions of early warning.

The critical importance of the air defense and other early-warning systems acknowledged, national intelligence must still measure up to its own responsibilities in the space age, when the accuracy of its esti-

mates is more closely bound than ever with the issue of national survival. In the unending quest for greater accuracy, the intelligence community is bound to modify its techniques of collection and analysis by incorporating the latest technological developments. Progress has been made in electronic data processing of information. Thousands of manhours will be saved in the intelligence community when machine translation becomes operational, to the point eventually of small-size machines and audible translation. The use of computers for gaming—measuring mathematically the optimum strategies open to a foreign nation—is a promising development. The value of the conclusions will, of course, depend on the data with which the intelligence community works. It can set up a model of a real system and test the behavior of the system under a variety of prescribed conditions, but the exercise is of intelligence value only insofar as the model approaches reality.

The areas of intelligence interest today—foreign policy, military developments, personalities, economic conditions, scientific achievements, for example—seem broadly representative of the probable subject content of intelligence in the space age. The relative weights of each subject will, of course, vary with the demands of the day: Military intelligence takes on additional importance in the event of hot war; economic intelligence remains in high demand if economic achievement continues to be vital to national strength in military struggle and to national prestige in cold-war competition. Increasing consideration of scientific intelligence in national estimates is imperative in an age when technological breakthroughs by one side may become the all-important factor affecting the balance of forces in the world.

The combination of personal observation and technical methods of intelligence collection and analysis will probably be increasingly weighted in favor of technical methods. Earth satellites equipped with TV cameras and other instruments, for example, should be able to distinguish the clouds caused by nuclear explosion, should in fact enlarge many times the amount of economic and military intelligence that can be uncovered by present-day methods of aerial photography. These developments, however, are hardly likely to eliminate or even diminish the importance of the human collector and analyst. Photos of factories do not tell all that goes on under the roofs of the factories. The course of political rivalries, the attitudes of peasants, the decisions of party councils—these are areas of intelligence interest where traditional collection methods should continue to be profitable and the human analyst essential.

Intelligence will continue to profit, of course, from the origination of concepts and methods in other disciplines. The concept of gross

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national product, developed as a tool of economic analysis, has been adapted in recent years to the needs of economic intelligence. Tabulations of the interindustry and interregional flows of goods and services have been more difficult to compile in the absence of necessary statistics. As such tabulations are developed in coming years for the United States and other economies, it may be possible to draw on them for parameters that can be applied to the study of Communist countries. The progress of academic research in the social and natural sciences will always contribute to the insights of national intelligence.

The need for these insights assures a continuing role for national intelligence in a space age of increasing complexities and multiplying uncertainties. With the expanding number of unknowns, intelligence errors are inevitable. The best to be hoped for is that errors will be embarrassing rather than disastrous. The design of the machinery, process, and concepts of national intelligence described in the foregoing pages is to minimize the errors and, above all, to be right when it is most important to be right.

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